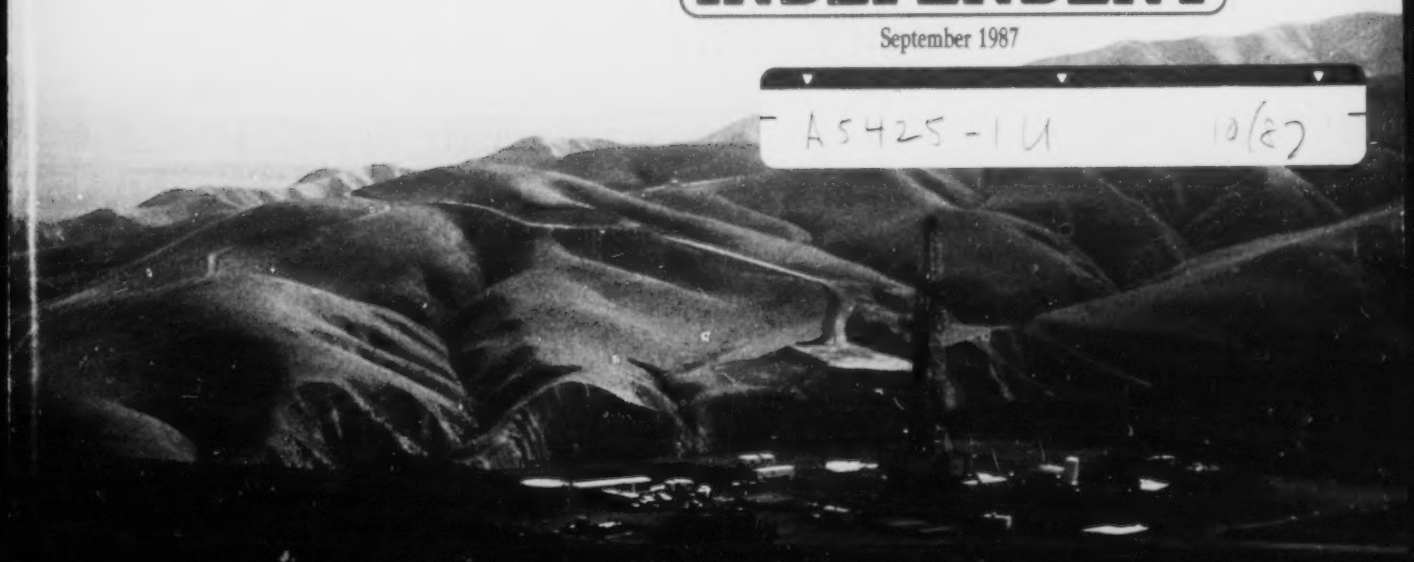
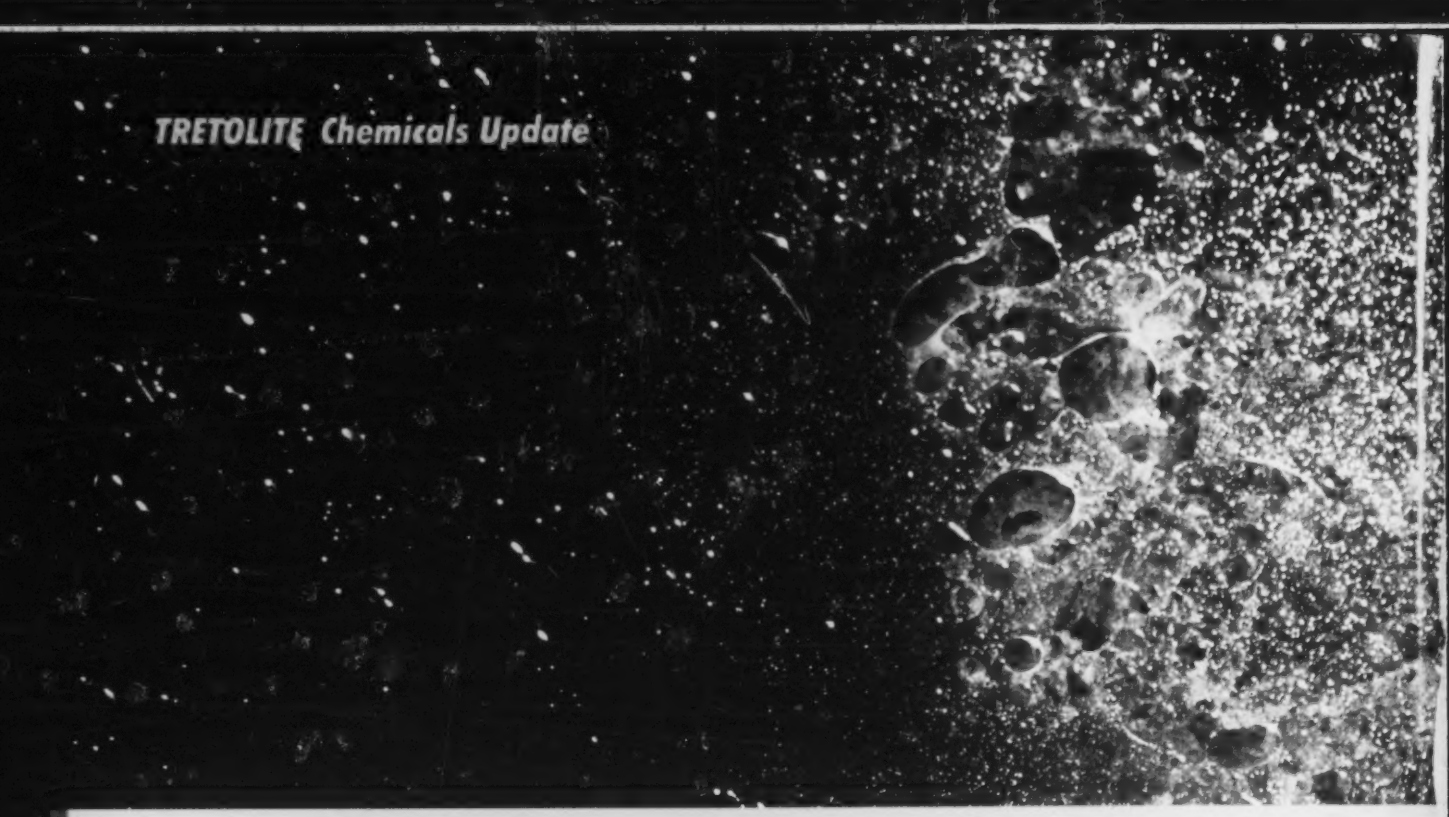
PETROLEUM
INDEPENDENT
September 1987

A5425-1 U 10/87



The Oil & Gas Producing Industry in Your State

1987-1988



Petrolite TSA™ Programs— Proven Cost-Effective Worldwide.

Here's more proof that Petrolite's TOTAL SYSTEMS APPROACH℠ services save operators money around the world.

Case 1 (Lima, Peru): TSA program saves $121,717 in recovered tank-bottom crude. Mechanical removal of paraffin tank bottoms had proved costly and environmentally questionable.

Studies indicated that a TSA paraffin-treatment program would remove the bottoms and recover the entrained crude. The results: In seven days, tank bottoms were dispersed, and the operator reclaimed 15,000 additional barrels of oil that met the refinery's BS&W requirements with no further treatment. Prior to Petrolite's treatment, the operator had recovered only 200 barrels of oil.

Case 2 (Gulf of Mexico): TSA program saves operator $1,000,000 in mechanical flowline cleanout costs. Paraffin deposition in subsea production flowline had increased pressure from 400 psi to 1300 psi and all but stopped the pumping of oil ashore.

Petrolite laboratory and field personnel developed a TSA batch-and-soak treatment followed by pigging. The results: Flowline pressure decreased to 400 psi, and the line could handle all daily oil production without overload. A Petrolite monitoring and treatment program is currently maintaining these production parameters.

Case 3 (South China Sea): TSA treatment program recovers 52 miles of subsea flowline. Sulfate-reducing bacteria had caused the shut-down of 52 miles of 23-inch subsea flowline.

A TSA treatment program put the line back in operation. The results: The chemical plan has controlled the bacteria for more than 10 years, and the producer has reported no failures.

Total programs for total cost-efficiency. Petrolite's TSA programs are your formula for increased production and lower costs. By anaiyzing your operation as the total system it is, we can recommend solutions that add true cost-efficiency in terms of chemical costs and overall production increases.

For more information about TSA/TECBASE℠ case histories, contact Petrolite Oil Field Chemicals Group, 16010 Barker's Point Lane, Suite 600, Houston, Texas 77079. Phone: 713/558-5200. Telex: 4620346.

PETROLITE

Petrolite Oil Field Chemicals Group

®1987 Petrolite Corporation. All rights reserved. TRETOLITE, TSA, TOTAL SYSTEMS APPROACH and TECBASE are trade and service marks of Petrolite Corporation.

James D. Woods
President and
Chief Executive Officer

BAKER HUGHES

August 15, 1987

Dear IPAA members,

As a result of our merger, there have been many changes in the Baker and the Hughes organizations during the last six months. Because IPAA members are such an important part of our customer base, we at Baker Hughes Incorporated would like you to know exactly who to contact when you need our products or services.

A new pocket-sized brochure is available that gives a brief overview of the comprehensive products and services offered by our 15 companies. Baker Hughes is proud that these companies offer leading technologies for the exploration, drilling, completion, and production markets.

If you would like one of these brochures, please contact:

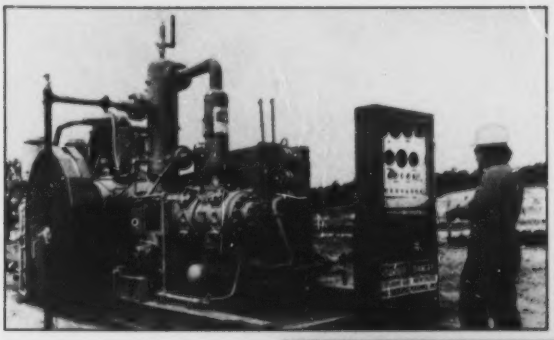
1-800-BAKER NOW (toll-free)
910-240-0004 BAKER NOW (telex)

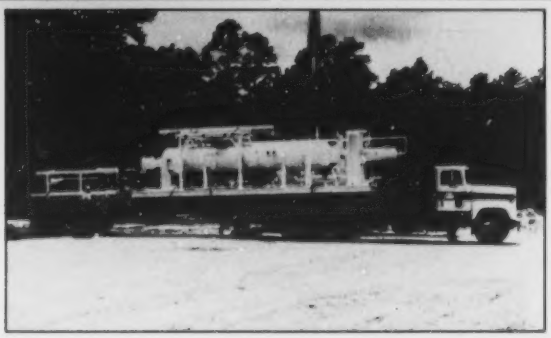
Again, if there is anything Baker Hughes can do for any IPAA member, please do not hesitate to call.

Very best regards,

James D. Woods

JDW:taw





Your best buy on this equipment is probably an HRM rental.

Your best profit is made in production. And, it makes sense to conserve your capital for that purpose. With the continuous changes in the oil and gas industry, it's just not normally good economics to tie up capital in equipment that may be in full use for under 3-5 years.

With an HRM rental plan, when your needs change, or when a piece of equipment needs major repair, you just change it out. Get the equipment you need for today's conditions — without being locked in for years.

You get an immediate cash flow benefit by eliminating any down payment for needed equipment. Then, your rental payment comes out of pretax dollars for an added boost to cash flow. You don't tie up your credit lines — and you keep your capital working for you where it helps make you the most profit.

No long-term commitment. You rent from HRM on a monthly basis. And, you have options as to how much involvement you want from HRM. We'll deliver, install, service and even operate the equipment for you if you like. So, you're relieved of having to hire additional personnel for what could be a short-term operation.

You can rent virtually anything you might need: compressors, dehydrators, pumping units, gas treatment facilities for CO_2 and H_2S removal and other major surface equipment.

Check out the details. Call or write for complete information.

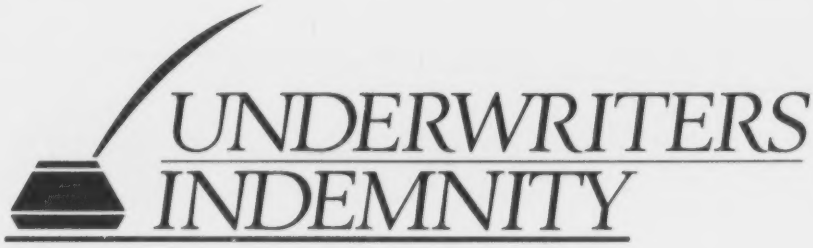
We help you conserve capital for what you do best.

HRM

Halliburton Resource Management

A Halliburton Company

1525 Elm Street, Suite 2900,
P.O. Box 1411, Dallas, Texas 75221,
214/954-6100



INSURING OIL & GAS LEASE OPERATORS & NON-OPERATORS

General Liability • Umbrellas • Blowout/Well Control • Pollution • Stuck Pipe • A.F.E. • Bonds

HAVE YOUR AGENT CALL US.

8 GREENWAY PLAZA, SUITE 1450 HOUSTON, TEXAS 77046 (713) 961-1300 TELEX: 4970815 UWRS

Contents

THE YEAR IN REVIEW 6

PETROLEUM STATISTICS

United States 14
Alabama 16
Alaska 18
Arizona 20
Arkansas 22
California 24
Colorado 26
Florida 28
Illinois 30
Indiana 32
Kansas 34
Kentucky 36
Louisiana 38
Maryland 40
Michigan 42
Mississippi 44
Missouri 46
Montana 48
Nebraska 50
Nevada 52
New Mexico 54
New York 56
North Dakota 58
Ohio 60
Oklahoma 62
Oregon 64
Pennsylvania 66
South Dakota 68
Tennessee 70
Texas 72
Utah 74
Virginia 76
West Virginia 78
Wyoming 80

EXPLORATION & DRILLING

Seismic Exploration Activity 82
Rotary Rigs Operating 83
New-Field Wildcats Drilled 86
Exploratory Wells Drilled 87
Development Wells Drilled 88
Total Wells Drilled 89

PRODUCING WELLS

Producing Crude Oil Wells 92
Producing Natural Gas Wells 93

PRODUCTION

Crude Oil Production 94
Natural Gas Production 95
Crude Oil Production by Chase Group 99

STRIPPER WELLS

Stripper Well Production 96
Producing Stripper Wells 97

FINANCIAL

Cost of Drilling & Equipping Wells 90
Drilling Costs/Cost Indices 91
Financial Statistics 98
Hourly Wages 98
Severance and Production Taxes 104
Value of U.S. Fossil Fuels 110

DEMAND

Product Consumption—1986 105
Energy Consumption 110

PRICES

Retail Gasoline Prices 84
Refiner Acquisition Cost of Crude Oil 99
Crude Oil Wellhead Prices 100
Natural Gas Wellhead Prices 101
Wholesale Prices—Total U.S 102
Wholesale Prices—East of California 103

MISCELLANEOUS

World Crude Oil Reserves 85
Peak Year Milestones 98
Industry Employment—1986 106
Employment Summary 107

STATISTICAL SUMMARY 108

REFERENCE INFORMATION

State Data Sources 10
Advertisers' Index 111

The Oil & Gas Producing Industry In Your State

Editor/Director of Statistics.....**Deborah Rowell**

Assistant Editor/Research.....**Barbara O. Adolfson**

Administrative Assistant.....**LuAnne O'Bannon**

The Oil & Gas Producing Industry In Your State is published in September by Petroleum Independent Publishers, Inc. It is the special statistical issue of Petroleum Independent, official magazine of the Independent Petroleum Association of America.

Members of IPAA receive one free copy of this issue; additional copies cost $20 each. Non-members of IPAA are charged $50 per copy. Complimentary subscribers (government agencies, schools, libraries, the press and non-profit organizations) are entitled to one free issue; additional copies cost $50 each.

In addition to **The Oil & Gas Producing Industry In Your State**, IPAA offers the following publications as part of its Statistical and Economic Reports:

Weekly Oil Trends (weekly)
Supply & Demand Outlook (monthly)
Wholesale Oil Prices (monthly)
U.S. Petroleum Statistics (semi-annually)
Supply and Demand Committee Report (semi-annually)
Cost Study Committee Report (semi-annually)

Non-members of IPAA may subscribe to the entire series of reports listed above for $300 per year. Members and complimentary subscribers may be added to the mailing list free of charge by contacting the Information Services Department.

Please direct all inquiries about this publication or any of IPAA 's Statistical and Economic Reports to:

Independent Petroleum Association of America
Information Services Department
1101 16th Street, N.W.
Washington, D.C. 20036
Phone 202-857-4760

Cover photo taken in Southern Rim of San Joaquin Valley, Calif., courtesy, American Petroleum Institute

Note: Permission is granted to copy any material in this publication if appropriate copyright credit is given.

PETROLEUM
INDEPENDENT

SEPTEMBER 1987

Editor
Joe Taylor

Design & Production
Atlantic Research Corp.

Contributing Editors
Bill Anderson
Doug Francisco
Ronald M. Harris
Alex Mills
Robert C. Platt
Deborah Rowell
Barry Russell
Harold B. Scoggins, Jr.

Editorial Assistant/ Circulation Manager
Rick Carbo

Advertising Offices
Roy Markum
AdCraft
1200 Post Oak Blvd.
Suite 200
Houston, TX 77056
713/627-9930

Robert Korte
5147 S. Harvard, #135
Tulsa, OK 74135
918/492-4929

IPAA Office
202/857-4722

Petroleum Independent (ISSN 0747-2528) is published seven times a year in the months of February, April, June, August, September, October and December by Petroleum Independent Publishers, Inc., 1101 16th St., N.W., Washington, D.C. 20036. This issue: September, 1987. Second class postage is paid in Washington, D.C. and additional mailing offices. Subscriptions are $35/year, payable to Petroleum Independent. Reasonable care will be taken with unsolicited manuscripts, photographs and drawings but the publisher cannot be responsible for safe return. Submissions should be accompanied by a self-addressed envelope with sufficient postage. Postmaster: Send change of address to Petroleum Independent, 1101 16th St., N.W., Washington, D.C. 20036.

TAYLOR
STRATMARK®
INCORPORATED

**TAYLORED
NATURAL GAS MARKETING
AND SUPPLY STRATEGIES**
that help you find...

Not a broker, Taylor StratMark® helps you help yourself!

1...the route to marketing solutions for the independent producer...

2...the route to supply solutions for the distribution company and industrial/commercial end-user...

3...the route to "what if" answers and access to cost-effective pipeline transportation routing and product exchange opportunities via the *Official Pipeline Guide*® under a license from **Dun & Bradstreet** and **Jensen Associates.**

Call or write for more information on how you can help yourself!

Taylor StratMark®
P.O. Box 2636
Northbrook, Illinois 60065
Phone 312-498-2552
FAX 312-498-5212

The Year in Review

In the 48 years that the Independent Petroleum Association of America (IPAA) has published *The Oil & Gas Producing Industry In Your State*, there never has been a more severe downturn in the industry than the one that occurred in 1986.

Coming after a four-year industry recession, the most dramatic price collapse in history took a heavy toll on all aspects of the crude oil and natural gas business — from drilling and production to revenues and employment. The pervasive economic effects are apparent throughout this volume as virtually all of the 33 oil and gas producing states have been affected.

U.S. crude oil prices began falling in January, 1986, pushed downward by excess supply on the international petroleum market. By July, wellhead prices had spiraled to below $10.00 per barrel, from around $24.50 at the beginning of 1986. The average crude oil price for the year was $12.66 per barrel, a drop of 47 percent from 1985.

On a more upbeat note, oil prices have been strengthening throughout 1987, although they still remain under the 1985 range. However, it is too early to assess whether the industry depression has bottomed out. Since the scope of this publication is limited to annual data, any positive trends taking place in 1987 will not be reflected until next year's issue.

In addition to the crude oil price plunge, there was a decline in natural gas prices, even though they tend to be less responsive as a result of contract and regulatory constraints. The average domestic wellhead price of gas fell to $1.87 per thousand cubic feet (Mcf) in 1986, down more than 25 percent from 1985.

The dive in petroleum prices caused equally significant changes in most industry barometers. The seismic crew count, one of the most common indicators of future oil and gas exploration, dropped 42 percent in 1986. There were 2,024 land and marine crews at work during the year, compared to nearly 3,500 crews in 1985. The adjacent table shows that most of the top petroleum producing states had large percentage declines. However, there were a few states with gains in geophysical activity — such as New Mexico, Michigan, Montana, and South Dakota.

The rotary rig count has become the most widely followed indicator of business conditions in the U.S. petroleum industry. It clearly reflected the depressed state of the industry in July, 1986, when just 663 rotary rigs were operating at one point. This was the lowest rig count level since record-keeping began in the 1940s. By comparison, the all-time high was 4,530 active rigs at the end of December, 1981. The annual average count for 1986 was 964 rigs, less than half the 1,980 rigs during the prior year.

With the number of seismic crews and rotary rigs declining for two consecutive years, it was inevitable that drilling would be curtailed. The latest available estimates (as of publication date) indicate that there were only 36,209 total well completions in 1986. This is 48 percent below 1985, and the worst drilling rate since 1974. U.S. drilling began to fall after 1981, when annual completions peaked at 91,600 wells.

Almost half of the exploratory and development completions in 1986 were oil wells, while nearly one-third proved to be dry holes. Natural gas wells numbered 6,889 for the year, making up the remaining 20 percent of total completions.

Development wells accounted for 80 percent of all domestic oil and gas drilling in 1986, as they have for the past five years. Exploratory wells, which comprise the other 20 percent, dropped by nearly half. Although new-field exploratory wells were off by 40 percent in 1986, there were several states in which the number of wildcats increased. The most noticeable gains occurred in Kansas, Kentucky, Arizona, and Virginia.

The influence of declining prices on wellhead revenues is shown in the accompanying graph. Total receipts for the producing industry plunged to $72 billion in 1986, down from $122 billion in 1985. This unprecedented slide of 41 percent in just one year amounts to more than $50 billion in diminished revenues.

It is interesting to note the growing relative importance of natural gas operations in the past year. Wellhead receipts from natural gas dropped markedly to $31 billion in 1986. However, the share of gas sales climbed to 44 percent of total petroleum revenue in 1986, up from a 35 percent share in 1985.

TOP PETROLEUM PRODUCING STATES
% CHANGES 1985-1986

	SEISMIC CREWS WORKING	ROTARY RIGS ACTIVE	TOTAL WELLS DRILLED
Texas	-46%	-54%	
Alaska	+158%	-35%	
Louisiana	-53%	-50%	
California	-41%	-40%	
Oklahoma	-43%	-44%	
Wyoming	-47%	-61%	
New Mexico	-47%	-59%	
Kansas	-47%	-49%	
TOTAL U.S.	-48%	-51%	

Sources: Society of Exploration Geophysicists
American Petroleum Institute
Baker Hughes, Inc.

IPAA

Wellhead revenues have been impacted as much by the erosion of production levels as by the downturn in oil and gas prices. In fact, U.S. crude oil production in 1986 suffered its most precipitous decline since the mid 1970s. After turning up for four consecutive years, domestic crude oil output fell 3 percent to an annual average of 8.7 million barrels per day (b/d) in 1986.

For the first time in 10 years, the number of producing oil wells contracted. By contrast, the number of producing natural gas wells increased by 1.9 percent in 1986, setting a new record...

A more accurate picture of production trends shows up in the monthly statistics. Compared to the nearly 9.2 million b/d produced in early 1986, total U.S. crude oil output plunged to less than 8.4 million b/d by December of that year. This 9 percent fall translates to 821,000 b/d of reduced domestic petroleum supply.

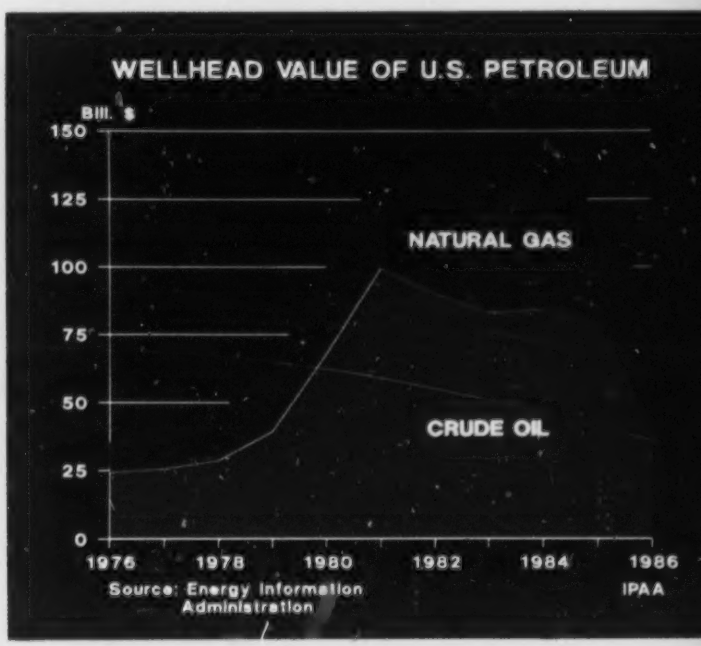
The situation appears even more alarming when the rising output from Alaska's North Slope is excluded from the analysis. Crude oil production in the lower 48 states eroded to less than 6.9 million b/d in 1986, or 5 percent below the previous year. The monthly figures reveal that crude oil output in the contiguous states dropped by as much as 10 percent from January to December, 1986.

U.S. natural gas production also fell in 1986, to an average 16.8 trillion cubic feet (Tcf). This 2 percent annual decline follows a weakening of almost 6 percent from 1984 to 1985. Natural gas deliverability and regulatory problems have continued to foster excess supplies on the domestic market.

For the first time in 10 years, the number of producing oil wells contracted. There were 623,404 crude oil wells producing at the end of 1986, nearly 4 percent fewer than the year before. With crude oil prices averaging in the low teens during 1986, the operating cost of many wells overshadowed potential revenues. In fact, the number of abandoned oil wells reached their highest level in the history of the U.S. industry.

By contrast, the number of producing natural gas wells increased by 1.9 percent in 1986, setting a new record of 250,457 wells. However, the rate of growth was less than half that of the prior two years. More than one-third of the states with natural gas production saw a decline in the number of producing gas wells by year-end.

Depressed industry conditions were evident in U.S. employment data from the Bureau of Labor Statistics. The average number of people engaged in oil and gas



production fell to 457,400 in 1986, nearly 22 percent fewer than the year before. Since 1984, there have been almost 150,000 jobs lost in the extraction phase. The entire U.S. petroleum industry (including refining, transportation, and marketing) employed about 1.6 million workers in 1986, down 8 percent from the prior year.

The amount of severance and production taxes paid by the domestic petroleum industry decreased for the fourth straight year in 1986. The total of over $5.2 billion in state and local receipts was 20 percent less than during 1985. Of the 27 states that levy taxes on the privilege of "severing" nonrenewable petroleum resources from their land, the largest sums in recent years have been collected by Texas, Alaska, Louisiana, and Oklahoma. From the time that IPAA began surveying this data more than 20 years ago, severance tax revenues increased steadily until the peak of more than $7.1 billion in 1982.

Another data series that IPAA has collected for many years is the amount of acreage-under-lease for petroleum in each state. Beginning with this issue, it has become necessary to discontinue publishing acreage figures due to the unavailability of data for most of the major petroleum producing areas. This decision was necessary to maintain IPAA's established policy of releasing only the most accurate industry statistics available. — **Deborah Rowell**

INDEPENDENTS
HAVE A VOICE THROUGH
IPAA Committees

Policy Committees

CRUDE OIL — studies and reports on legislative and administrative developments affecting crude oil pricing and associated regulations, and recommends policy.

ECONOMIC POLICY — studies a multiplicity of economic and financial factors affecting the domestic oil and gas industry and recommends policy.

ENVIRONMENT AND SAFETY — studies and reports on safety, health and environmental problems, the activities of OSHA, the EPA, and recommends Association policy action.

NATURAL GAS — studies problems of natural gas production and recommends policies and courses of action.

PUBLIC LANDS — studies and comments on legislation and regulations affecting exploration for and the development of oil and natural gas on government owned lands.

TAX — studies and recommends policies and actions on federal tax issues pertaining to oil and gas production.

Technical Committees

COST STUDY — analyzes cost of finding, developing and producing oil and gas.

OIL RECOVERY — studies and reports on the results of primary, secondary, and enhanced oil recovery techniques applied in the production of crude oil.

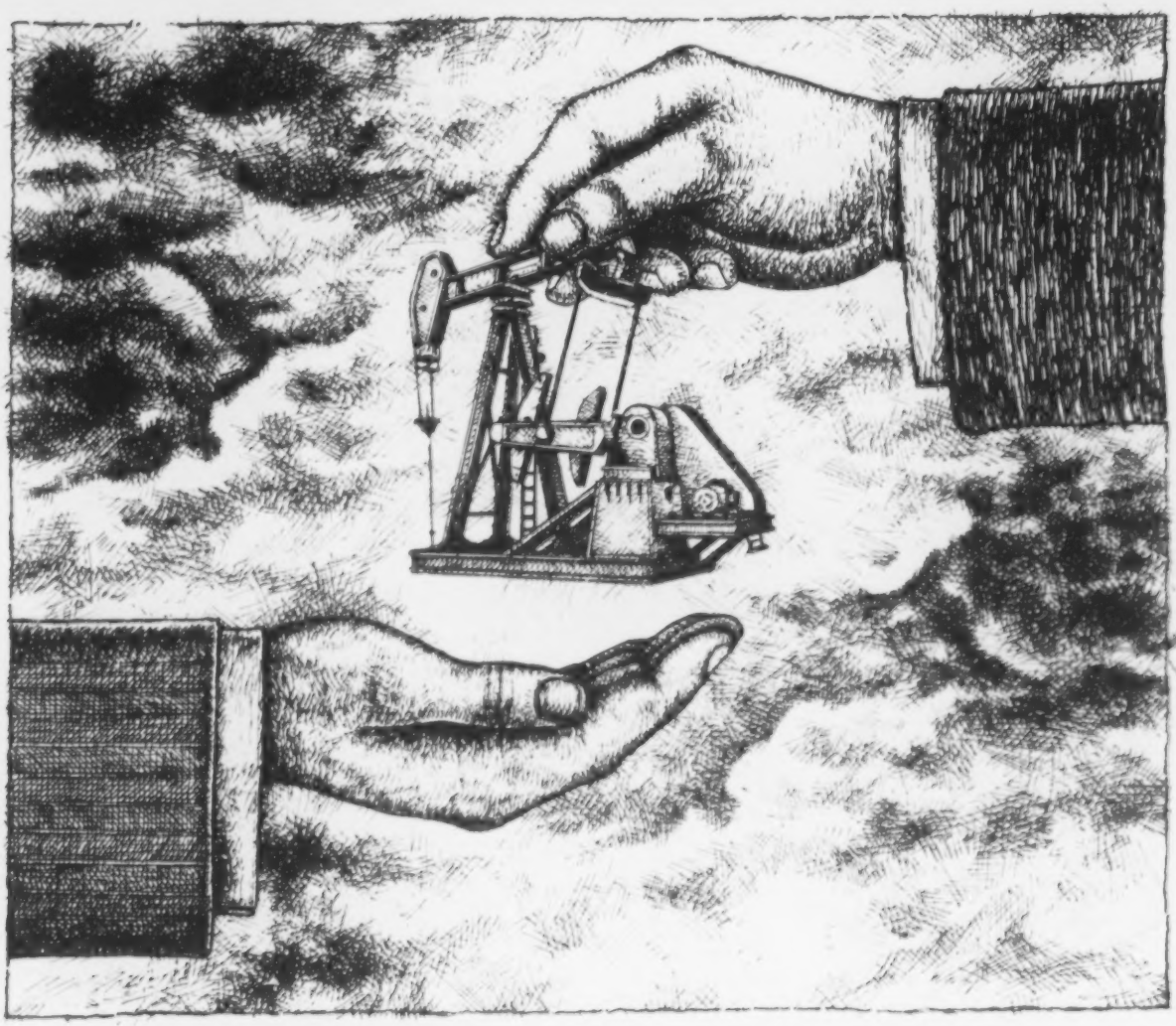
SUPPLY AND DEMAND — analyzes and reports on anticipated demand for petroleum and its products and the required supply to meet this demand.

Other Committees

MEMBERSHIP — determines plans for and implements programs to increase the numerical and financial strength of the Association.

SPEAKERS BUREAU — educates the public on energy policies favorable to the oil industry through speeches to civic organizations, universities and the media.

For further information, contact:
Membership Department
INDEPENDENT PETROLEUM ASSOCIATION OF AMERICA
1101 Sixteenth Street, N.W.
Washington, D.C. 20036
Phone No. 202-857-4740



When you pick your own successor, pick a good one.

One of the most important decisions you'll ever make about your oil and gas assets is deciding who should manage them when you no longer can. First RepublicBank Fort Worth can help assure the continued good management of your interests.

In nearly 60 years of managing oil interests, we have become America's leader in the field. In fact, since almost half of our trust accounts have oil and gas assets, we're staffed like an operating oil company with petroleum engineers, landmen, lease analysts, petroleum accountants and tax specialists.

Our clients include individuals, employee benefit plans, limited partnerships and more than 50 banks nationwide. We serve as agent, trustee, executor, successor trustee, ancillary administrator, agent for the executor or agent for the trustee. We also supervise operating and non-operating working interests, negotiate leases and other contracts, solve title problems and provide accounting and tax information.

Because we *actively* manage oil and gas, we understand the need to preserve – and often improve – these properties for the benefit of future generations.

To find out how you can benefit from First RepublicBank's expertise, please call Bill Henson or Bryan Dixon at 817/390-6971, or simply send us the coupon below.

Tell me more about your Property Management Services.

Name _____

Company _____

Address _____

City/State _____

Zip _____ Phone _____

First RepublicBank

Mineral Property Management
P.O. Box 2546, Fort Worth, TX 76113 FDIC

Data Sources

The format of the individual state pages was changed beginning with the 1984 edition. So data in current issues may be compared to the previous format, the listing below shows the item number used for each category prior to 1984. The editor gratefully acknowledges the following sources.

(1)	Number of counties	*The World Almanac*
(15-16, 18-19)	First and peak production years	*AIME Statistical Yearbook, World Oil, Oil & Gas Journal & World Petroleum Report*
(28-29)	Deepest wells drilled	*World Oil*
(31)	Cumulative wells drilled	*Oil & Gas Journal, World Petroleum Statistical Yearbook,* International Oil Scouts Association, Petroleum Information & API
(7)	Cumulative wellhead value	IPAA
(26)	Cumulative production and reserves	API, American Gas Association & EIA
(8-11)	Wellhead prices and value	EIA
(new)	End-use natural gas prices	EIA
(new)	Severance and production taxes	IPAA survey
(30)	Wells and footage drilled	API
(17)	Seismic crews working	Society of Exploration Geophysicists
(27)	Rotary drilling rigs	Baker Hughes, Inc.
(21,23)	Producing wells	World Oil
(24)	Oil and gas production	EIA
(14)	Number of employees	IPAA survey
(25)	Petroleum reserve position	EIA
(new)	Drilling costs	*Joint Association Survey on Drilling Costs*
(20)	Stripper wells	Interstate Oil Compact Commission & National Stripper Well Association
(12-13)	Rank among principal minerals	Based on data from Department of Interior & EIA

Ahead of the Field

Since 1951, Newport Steel Corporation's facility has been dedicated to staying ahead of the field by producing top quality tubular products. Recent modernization and expansion projects such as the new 16" Wean-United ERW mill has expanded Newport Steel's product range from 4½" through 13⅜" O.D. for users of API line pipe and oil country tubular goods.

This, along with the acquisition of the Erlanger finishing facility in Oklahoma will keep Newport Steel ahead of the field as a fully integrated steel company...Newport Steel...a major supplier of ERW tubular products for the oil and gas industry that exceed all API and ASTM specifications. Call or write today for more information.

Newport Steel

Oil Country Tubular Goods
Line Pipe • Pipe Piling

Ninth & Lowell Streets • PO Box 1670
Newport, Kentucky 41072

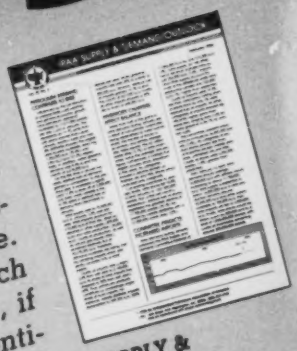
Phone (606) 292-6818
TWX 810-541-8512
FAX 606-292-0110

Stop Guessing!!!

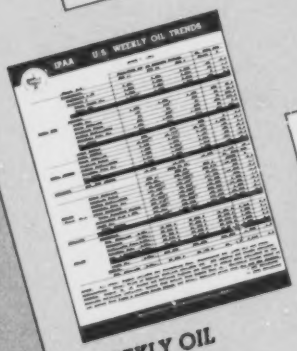
Use IPAA Statistical and Economic Reports!

Timely, accurate information essential to making vital business decisions. You don't necessarily have to be an IPAA member to subscribe. Send for our potential subscribers packet which includes a sample of each report. However, if you are already an IPAA member, you are entitled to a free subscription. Our 30 year track record of providing important facts and forecasts to the industry speaks for itself. Just mail the attached coupon today.

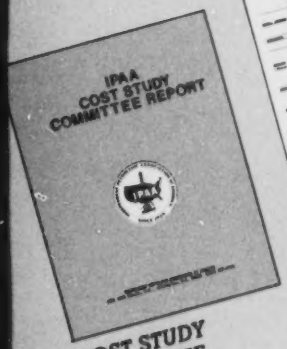
SUPPLY & DEMAND COMMITTEE REPORT
Semiannual economic analysis and forecasts of oil supply and demand.



SUPPLY & DEMAND OUTLOOK
Widely-respected monthly newsletter with timely statistics, economic analysis.

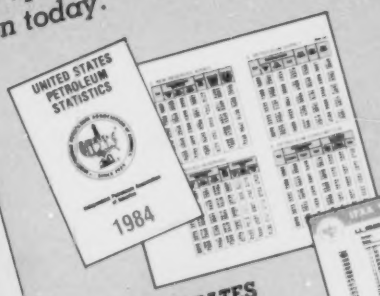


WEEKLY OIL TRENDS
Up-to-the-minute statistics covering the entire U.S. petroleum industry.

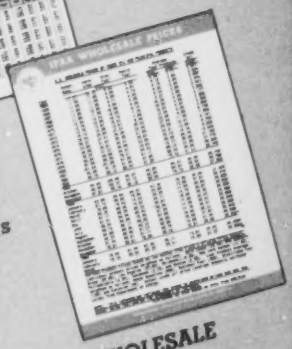


COST STUDY COMMITTEE REPORT
Semiannual economic analysis of oil field costs and drilling.

THE OIL PRODUCING INDUSTRY IN YOUR STATE
Indepth reference book focusing on the 33 oil and gas producing states.



UNITED STATES PETROLEUM STATISTICS
Pocket-sized pamphlet with 20 years of petroleum-related data.



WHOLESALE PRICES
Monthly summary of U.S. wholesale prices of crude oil and principal products.

Independent Petroleum Association of America
1101 16th St., N.W., Wash., D.C. 20036. Attn. Information Services Dept. (202) 857-4760

Name _____

Company _____

Address _____

City _____ State _____ Zip _____

Phone _____

☐ I am already an IPAA member. Please add my name to your Statistical & Economic mailing list.

☐ Please send a Potential Subscriber packet with a free sample of all publications.

Learn from the past, Plan for the future.

Prepare yourself with the authoritative source-book for vital 1986 oil and gas statistics. **Resume 1986** is the most comprehensive annual of its kind, published by Petroleum Information, the respected, single source of drilling and completion statistics for the API. **Resume 1986** provides extensive reference data, statistical analysis and in-depth 5 and 10 year comparisons of U.S. well completions, including detailed examinations of the elements and subsets comprising national totals. National and regional analyses include extensive charts and graphs. Reserve your copy today.

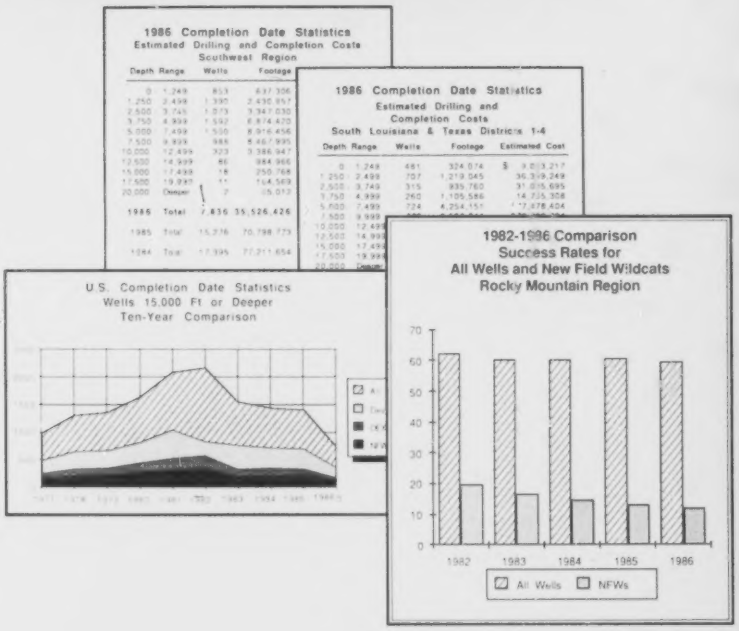
This versatile review of 1986 well completions is a must for intelligent planning!

Extensive national and regional analyses of 1986 activity include:

- well completions
- exploration reviews
- well permits and new starts
- expenditures
- depth analyses
- leading operators
- geological provinces
- states
- counties
- fields
- deep drilling by province
- development drilling
- rotary and geophysical activity
- comprehensive multiple year comparisons

In addition, discovery well listings for 1986 will be presented by region and include such data as:

- location
- well name
- operator
- producing formation(s)
- total depth
- initial potential



Resume 1986, the most comprehensive review of the nation's well completions, available in soft cover for just $75.* Quantities are limited, so order your copy today.

Mail to: Petroleum Information
Attn: Marketing, P.O. Box 2612
Denver, CO 80201-2612

or call:
1-800-OIL DATA (1-800-645-3282).
In Colorado call 740-7100.

YES, I'd like ____copy(ies) of PI's **RESUME 1986** for just $75* each.
*Plus tax where applicable, and $4 shipping and handling.

Name _____

Title _____

Company _____

Address _____

City/State/Zip _____

Area Code/Phone _____

Authorized Signature _____
(I will be billed later)

0287

Petroleum Information

a company of The Dun & Bradstreet Corporation

UNITED STATES

☐ States with oil and/or gas production

Background Information

Number of States 50
With oil and/or gas production 33

First year of production:
Crude oil 1859
Natural gas 1881

Year and amount of peak production:
Crude oil — 3,517,450 thous. bbls. 1970
Natural gas — 22,647,549 MMcf 1973

Deepest well drilled: (ft.)
Crude oil 18,060
Natural gas 26,536
Dry hole 31,441

Cumulative number of total wells drilled as of 12/31/86: (excluding service wells)

Oil wells	1,712,849	57%
Gas wells	363,626	12%
Dry holes	920,823	31%
Total	2,997,298	100%

Cumulative crude oil wellhead value as of 12/31/86: (thous. $) $997,461,043

Cumulative production & new reserves as of 12/31/85: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	171,062	31,574	202,636	888,000
Production	142,646	23,630	166,276	685,798

Value of Oil and Gas

Average 1986 wellhead price:
Crude oil ($/bbl.) $12.66
Natural gas ($/Mcf) $1.87

Wellhead value of 1986 production: (thous. $)
Crude oil $40,110,070
Natural gas $31,432,368
Total $71,542,438

Average 1986 natural gas price to: ($/Mcf)
Residential consumers $5.82
Commercial consumers $5.10
Industrial consumers $3.18
Electric utilities $2.43
All consumers $4.26

Severance taxes paid in 1986 (thous. $) $5,234,609

1986 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	949	16,252	17,201
Gas	704	6,185	6,889
Dry	5,137	6,369	11,506
Service	- -	613	613
Total	6,790	29,419	36,209

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	5,777.1	65,030.2	70,807.3
Gas	4,836.7	33,459.9	38,296.7
Dry	28,971.3	28,526.2	57,497.5
Service	- -	2,109.6	2,109.6
Total	39,585.1	129,126.0	168,711.1

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 3,333
New-field wildcat footage (thous. ft.) 21,157.3

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	- -	- -
Production	- -	- -
Reserves (1985)	- -	- -

Seismic crew months worked 2,024
Average rotary rigs active 964

Number of producing wells: (12/31/86)
Crude oil 623,404
Flowing 35,148
Artificial lift 588,256
Natural gas 250,457
Total 873,861

Average production:	thous. bbls.	thous. b/d
Crude oil	3,168,252	8,680
NGL	566,115	1,551
Total	3,734,367	10,231

Natural gas marketed production (MMcf) 16,808,753
Average output per producing well:
Crude oil (bbls.) 5,082
Natural gas (Mcf) 67,112

Average number of employees in:
Oil and gas extraction 451,618
Refining 138,091
Transportation 183,266
Wholesale 203,293
Retail 596,005
Total petroleum industry 1,572,273

1985 Latest Data

Petroleum reserve position as of 12/31/85:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	3,022	1,054	4,076
Production	3,052	753	3,805
Net annual change	-30	301	271
Proved reserves	28,416	7,944	36,360

Natural gas reserve position as of 12/31/85:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	3,423	9,593	13,016
Production	3,454	13,344	16,798
Net annual change	-31	-3,751	-3,782
Proved reserves	60,607	141,595	202,202

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	9,141,070	270,446	66.78
Gas	7,047,142	508,672	93.09
Dry	7,508,391	372,311	73.69
Total	23,696,603	349,399	75.35

Number of producing strippers 458,447
Number of stripper well abandonments 16,024

Stripper well crude oil production:
(bbls.) 455,883,780
(b/d) 1,248,997
Percentage of oil produced by stripper wells 14%

Stripper oil reserves as of 12/31/85: (thous. bbls.)
Primary 2,331,320
Secondary 1,876,927
Total 4,208,247

Percentage of total value of principal mineral production:
Crude oil — ranked 1st 47%
Natural gas — ranked 2nd 26%

National Energy Contact

Energy Information Administration
Forrestal Building, Room 1F-048
1000 Independence Avenue, S.W.
Washington, D.C. 20585
(202) 586-5000

ALABAMA

☐ Counties with oil and/or gas production

Background Information

Number of counties 67
With oil and/or gas production 16

First year of production:
Crude oil 1944
Natural gas 1904

Year and amount of peak production:
Crude oil — 22,153 thous. bbls. 1980
Natural gas — 107,342 MMcf 1985

Deepest well drilled: (ft.)
Crude oil 18,750
Natural gas 21,650
Dry hole 21,859

Cumulative number of total wells drilled as of 12/31/86: (excluding service wells)

Oil wells	953	22%
Gas wells	817	18%
Dry holes	2,626	60%
Total	4,396	100%

Cumulative crude oil wellhead value as of 12/31/86: (thous. $) $5,495,905

Cumulative production & new reserves as of 12/31/85: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	330	321	651	1,614
Production	261	139	400	740

Value of Oil and Gas

Average 1986 wellhead price:
Crude oil ($/bbl.) $13.91
Natural gas ($/Mcf) $2.15

Wellhead value of 1986 production: (thous. $)
Crude oil $293,807
Natural gas $230,504
Total $524,311

Average 1986 natural gas price to: ($/Mcf)
Residential consumers $6.42
Commercial consumers $5.40
Industrial consumers $3.63
Electric utilities $2.62
All consumers $4.66

Severance taxes paid in 1986 (thous. $) $64,863

1986 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	6	23	29
Gas	21	39	60
Dry	51	78	129
Service	- -	0	0
Total	78	140	218

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	60.5	135.4	195.9
Gas	98.1	168.7	266.7
Dry	376.3	425.6	801.8
Service	- -	0.0	0.0
Total	534.8	729.6	1,264.4

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 74
New-field wildcat footage (thous. ft.) 508.8

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	24th	18th
Production	16th	16th
Reserves (1985)	19th	18th

Seismic crew months worked 16
Average rotary rigs active 10

Number of producing wells: (12/31/86)
Crude oil 844
Flowing 102
Artificial lift 742
Natural gas 976
Total 1,820

Average production:	thous. bbls.	thous. b/d
Crude oil	21,122	58
NGL	11,500	32
Total	32,622	90

Natural gas marketed production (MMcf) 107,211
Average output per producing well:
Crude oil (bbls.) 25,026
Natural gas (Mcf) 109,847

Average number of employees in:
Oil and gas extraction 1,419
Refining 445
Transportation 3,078
Wholesale 5,119
Retail 7,544
Total petroleum industry 17,605

1985 Latest Data

Petroleum reserve position as of 12/31/85:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	11	-2	9
Production	10	16	26
Net annual change	1	-18	-17
Proved reserves	69	182	251

Natural gas reserve position as of 12/31/85:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	17	-76	-59
Production	5	86	91
Net annual change	12	-162	-150
Proved reserves	52	822	874

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	25,120	418,673	68.89
Gas	64,832	578,859	132.59
Dry	74,866	420,597	75.09
Total	164,819	470,911	89.06

Number of producing strippers 100
Number of stripper well abandonments 1

Stripper well crude oil production:
(bbls.) 188,981
(b/d) 518
Percentage of oil produced by stripper wells 2%

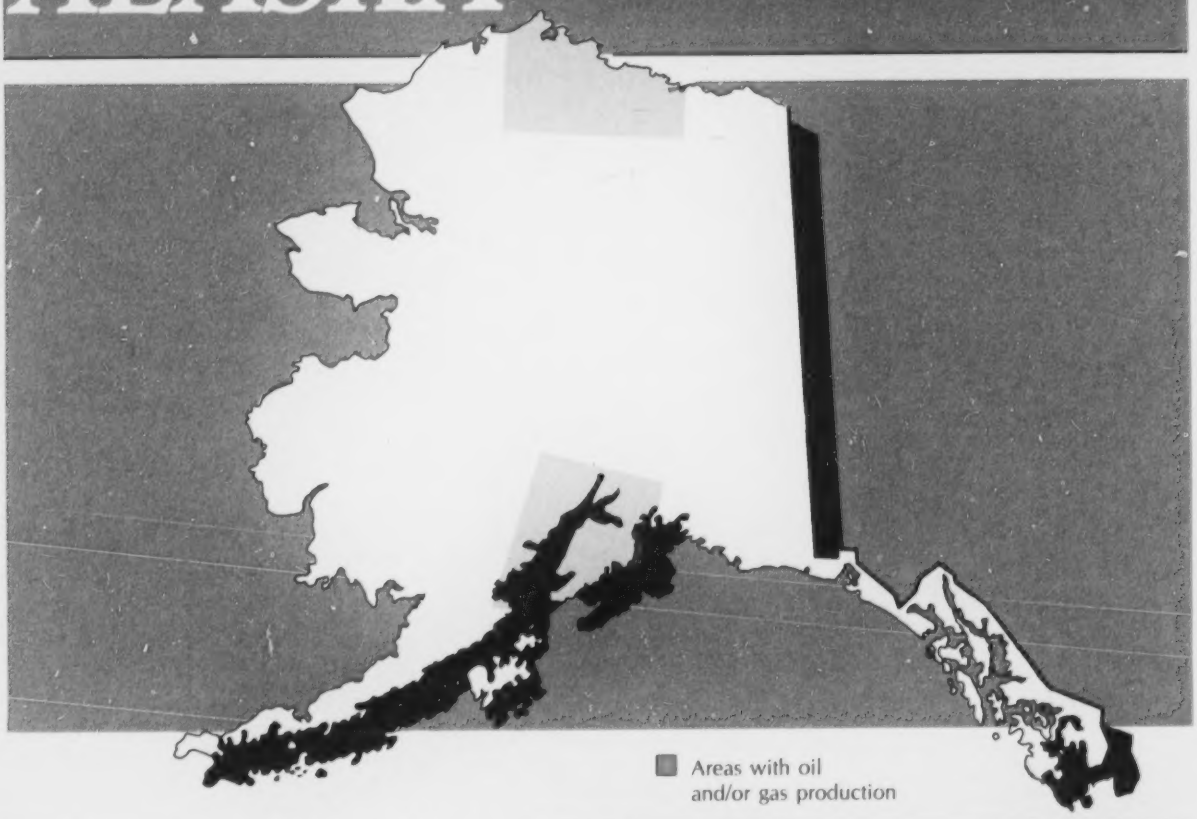
Stripper oil reserves as of 12/31/85: (thous. bbls.)
Primary 410
Secondary 18
Total 428

Percentage of total value of principal mineral production:
Crude oil — ranked 1st 22%
Natural gas — ranked 2nd 16%

State Energy Contact

Alabama State Oil and Gas Board
P.O. Box O
Tuscaloosa, AL 35486
(205) 349-2852

ALASKA



Background Information

Number of counties ..... Not Applicable
With oil and/or gas production ..... Not Applicable

First year of production:
Crude oil 1905
Natural gas 1945

Year and amount of peak production:
Crude oil — 681,310 thous. bbls. 1986
Natural gas — 321,346 MMcf 1985

Deepest well drilled: (ft.)
Crude oil 14,952
Natural gas 16,073
Dry hole 20,335

Cumulative number of total wells drilled as of 12/31/86: (excluding service wells)

Oil wells	1,539	72%
Gas wells	119	6%
Dry holes	482	22%
Total	2,140	100%

Cumulative crude oil wellhead value as of 12/31/86: (thous. $) $82,171,172

Cumulative production & new reserves as of 12/31/85: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	12,711	396	13,107	37,762
Production	5,655	13	5,668	3,539

Value of Oil and Gas

Average 1986 wellhead price:
Crude oil ($/bbl.) $6.71
Natural gas ($/Mcf) $0.50

Wellhead value of 1986 production: (thous. $)
Crude oil $4,571,590
Natural gas $153,234
Total $4,724,824

Average 1986 natural gas price to: ($/Mcf)
Residential consumers $3.27
Commercial consumers $2.16
Industrial consumers $0.84
Electric utilities ..... n/a
All consumers $1.62

Severance taxes paid in 1986 (thous. $) $1,355,800

1986 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	0	156	156
Gas	0	4	4
Dry	1	13	14
Service	- -	4	4
Total	1	177	178

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	0.0	1,528.2	1,528.2
Gas	0.0	26.7	26.7
Dry	11.9	98.6	110.5
Service	- -	41.8	41.8
Total	11.9	1,695.3	1,707.2

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 0
New-field wildcat footage (thous. ft.) 0

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	13th	24th
Production	2nd	8th
Reserves (1985)	2nd	3rd

Seismic crew months worked 16
Average rotary rigs active 13

Number of producing wells: (12/31/86)
Crude oil 1,109
Flowing 591
Artificial lift 518
Natural gas 103
Total 1,212

Average production:	thous. bbls.	thous. b/d
Crude oil	681,310	1,867
NGL	5,000	14
Total	686,310	1,881

Natural gas marketed production (MMcf) 306,468
Average output per producing well:
Crude oil (bbls.) 614,346
Natural gas (Mcf) 2,975,417

Average number of employees in:
Oil and gas extraction 8,457
Refining 255
Transportation 1,199
Wholesale 503
Retail 1,170
Total petroleum industry 11,584

1985 Latest Data

Petroleum reserve position as of 12/31/85:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	160	369	529
Production	667	5	672
Net annual change	-507	364	-143
Proved reserves	7,056	383	7,439

Natural gas reserve position as of 12/31/85:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	849	-789	60
Production	113	200	313
Net annual change	736	-989	-253
Proved reserves	31,092	3,131	34,223

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	407,856	1,989,544	226.03
Gas	2,702	2,701,594	388.72
Dry	104,037	17,339,424	1,439.57
Total	514,595	2,427,333	273.19

Number of producing strippers 0
Number of stripper well abandonments 0

Stripper well crude oil production:
(bbls.) 0
(b/d) 0
Percentage of oil produced by stripper wells 0

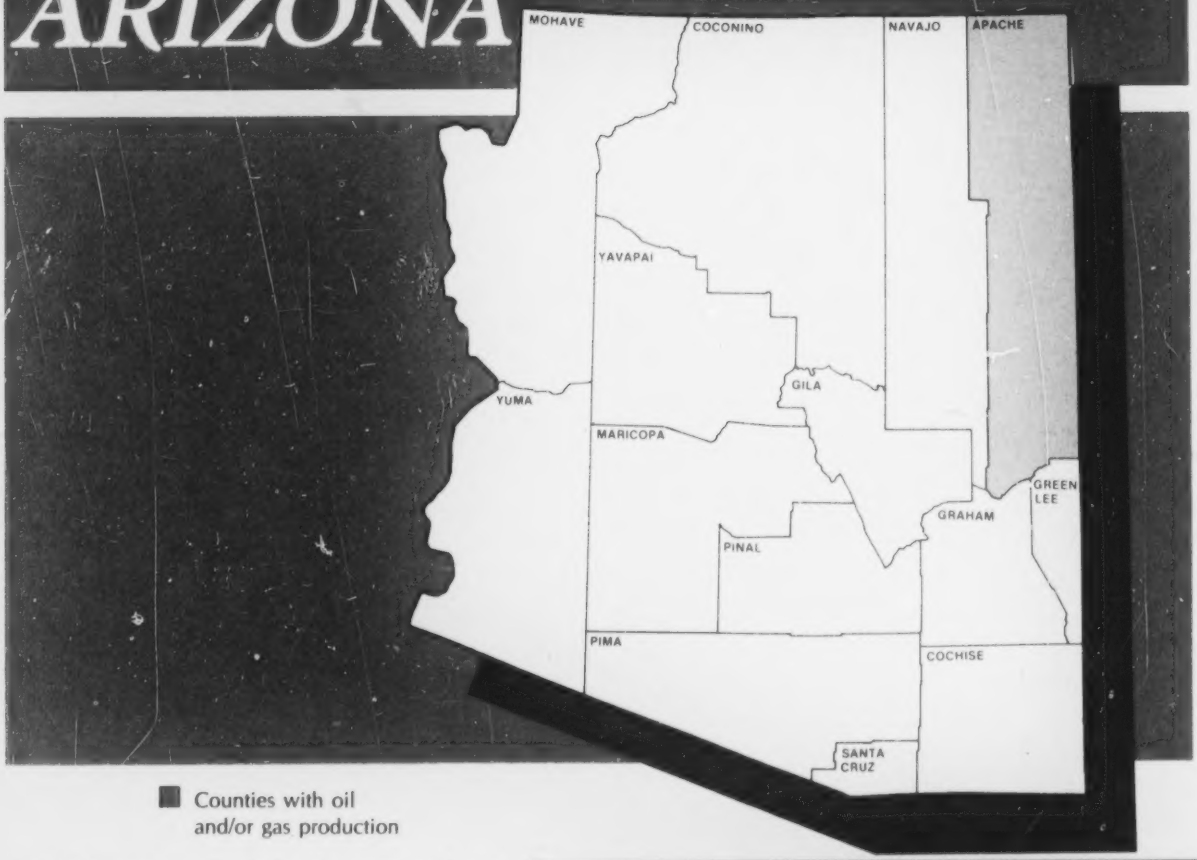
Stripper oil reserves as of 12/31/85: (thous. bbls.)
Primary 0
Secondary 0
Total 0

Percentage of total value of principal mineral production:
Crude oil — ranked 1st 97%
Natural gas — ranked 2nd 2%

State Energy Contact

Alaska Oil and Gas Conservation Committee
3001 Porcupine Drive
Anchorage, AK 99501
(907) 279-1433

ARIZONA



■ Counties with oil and/or gas production

Background Information

Number of counties 14
With oil and/or gas production 1

First year of production:
Crude oil 1954
Natural gas 1955

Year and amount of peak production:
Crude oil — 3,370 thous. bbls. 1968
Natural gas — 3,161 MMcf 1966

Deepest well drilled: (ft.)
Crude oil 6,793
Natural gas ..... n/a
Dry hole 18,013

Cumulative number of total wells drilled as of 12/31/86: (excluding service wells)

Oil wells	54	11%
Gas wells	35	7%
Dry holes	393	82%
Total	482	100%

Cumulative crude oil wellhead value as of 12/31/86: (thous. $) $70,769,988

Cumulative production & new reserves as of 12/31/85: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	n/a	0	--	n/a
Production	n/a	0	--	n/a

Value of Oil and Gas

Average 1986 wellhead price:
Crude oil ($/bbl.) $15.15
Natural gas ($/Mcf) $2.10

Wellhead value of 1986 production: (thous. $)
Crude oil $2,439
Natural gas $158
Total $2,597

Average 1986 natural gas price to: ($/Mcf)
Residential consumers $6.38
Commercial consumers $4.71
Industrial consumers $3.99
Electric utilities $2.46
All consumers $4.34

Severance taxes paid in 1986 (thous. $) ..... n/a

1986 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	0	0	0
Gas	0	0	0
Dry	5	0	5
Service	- -	0	0
Total	5	0	5

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	0.0	0.0	0.0
Gas	0.0	0.0	0.0
Dry	9.3	0.0	9.3
Service	- -	0.0	0.0
Total	9.3	0.0	9.3

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 5
New-field wildcat footage (thous. ft.) 9.3

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	- -	- -
Production	29th	30th
Reserves (1985)	- -	- -

Seismic crew months worked 5
Average rotary rigs active 0

Number of producing wells: (12/31/86)
Crude oil 24
Flowing 0
Artificial lift 24
Natural gas ..... n/a
Total 24

Average production:	thous. bbls.	thous. b/d
Crude oil	161	- -
NGL	0	- -
Total	161	- -

Natural gas marketed production (MMcf) 75
Average output per producing well:
Crude oil (bbls.) 6,708
Natural gas (Mcf) ..... n/a

Average number of employees in:
Oil and gas extraction 108
Refining 0
Transportation 1,947
Wholesale 1,506
Retail 8,481
Total petroleum industry 12,042

1985 Latest Data

Petroleum reserve position as of 12/31/85:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	n/a	0	- -
Production	- -	0	- -
Net annual change	- -	- -	- -
Proved reserves	n/a	0	- -

Natural gas reserve position as of 12/31/85:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	- -	- -	n/a
Production	- -	- -	n/a
Net annual change	- -	- -	- -
Proved reserves	- -	- -	n/a

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	- -	- -	- -
Gas	- -	- -	- -
Dry	- -	- -	- -
Total	n/a	- -	- -

Number of producing strippers 14
Number of stripper well abandonments 0

Stripper well crude oil production:
(bbls.) 28,094
(b/d) 77
Percentage of oil produced by stripper wells 16%

Stripper oil reserves as of 12/31/85: (thous. bbls.)
Primary 93
Secondary 0
Total 93

Percentage of total value of principal mineral production:
Crude oil — ranked 9th ..... Less than 1%
Natural gas ..... n/a

State Energy Contact

Arizona Oil and Gas Conservation Commission
3110 North 19th Avenue, Suite 190
Phoenix, AZ 85015
(602) 255-5161

ARKANSAS

☐ Counties with oil and/or gas production

Background Information

Number of counties 75
With oil and/or gas production 24

First year of production:
Crude oil 1921
Natural gas 1889

Year and amount of peak production:
Crude oil — 77,398 thous. bbls. 1925
Natural gas — 181,351 MMcf 1970

Deepest well drilled: (ft.)
Crude oil 12,128
Natural gas 11,195
Dry hole 17,349

Cumulative number of total wells drilled as of 12/31/86: (excluding service wells)

Oil wells	17,701	53%
Gas wells	3,389	10%
Dry holes	12,544	37%
Total	33,634	100%

Cumulative crude oil wellhead value as of 12/31/86: (thous. $) $7,353,195

Cumulative production & new reserves as of 12/31/85: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	1,682	91	1,773	6,497
Production	1,585	80	1,665	4,305

Value of Oil and Gas

Average 1986 wellhead price:
Crude oil ($/bbl.) $14.52
Natural gas ($/Mcf) $1.91

Wellhead value of 1986 production: (thous. $)
Crude oil $229,097
Natural gas $253,018
Total $482,115

Average 1986 natural gas price to: ($/Mcf)
Residential consumers $4.87
Commercial consumers $4.40
Industrial consumers $3.74
Electric utilities $1.64
All consumers $3.78

Severance taxes paid in 1986 (thous. $) $10,312

1986 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	10	140	150
Gas	8	146	154
Dry	65	111	176
Service	- -	0	0
Total	83	397	480

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	61.5	425.1	486.6
Gas	41.5	684.6	726.1
Dry	246.4	484.6	731.0
Service	- -	0.0	0.0
Total	349.4	1,594.2	1,943.6

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 66
New-field wildcat footage (thous. ft.) 248.6

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	14th	12th
Production	17th	13th
Reserves (1985)	16th	12th

Seismic crew months worked 12
Average rotary rigs active 9

Number of producing wells: (12/31/86)
Crude oil 10,047
Flowing 201
Artificial lift 9,846
Natural gas 2,719
Total 12,766

Average production:	thous. bbls.	thous. b/d
Crude oil	15,778	43
NGL	1,000	3
Total	16,778	46

Natural gas marketed production (MMcf) 132,470
Average output per producing well:
Crude oil (bbls.) 1,570
Natural gas (Mcf) 48,720

Average number of employees in:
Oil and gas extraction 2,758
Refining 627
Transportation 2,194
Wholesale 2,797
Retail 4,984
Total petroleum industry 13,360

1985 Latest Data

Petroleum reserve position as of 12/31/85:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	-2	0	-2
Production	15	1	16
Net annual change	-17	-1	-18
Proved reserves	97	11	108

Natural gas reserve position as of 12/31/85:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	-28	-3	-31
Production	4	173	177
Net annual change	-32	-176	-208
Proved reserves	157	1,875	2,032

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	40,573	105,111	35.77
Gas	94,747	370,107	78.16
Dry	103,447	298,118	59.85
Total	238,767	241,423	58.59

Number of producing strippers 4,942
Number of stripper well abandonments 85

Stripper well crude oil production:
(bbls.) 5,285,799
(b/d) 14,482
Percentage of oil produced by stripper wells 27%

Stripper oil reserves as of 12/31/85: (thous. bbls.)
Primary 131,603
Secondary 31,097
Total 162,700

Percentage of total value of principal mineral production:
Crude oil — ranked 1st 43%
Natural gas — ranked 2nd 35%

State Energy Contact

Arkansas Oil and Gas Commission
314 East Oak Street
El Dorado, AR 71730
(501) 862-4965

CALIFORNIA

☐ Counties with oil and/or gas production

Background Information

Number of counties 58
With oil and/or gas production 30

First year of production:
Crude oil 1861
Natural gas 1889

Year and amount of peak production:
Crude oil — 423,877 thous. bbls. 1985
Natural gas — 714,893 MMcf 1968

Deepest well drilled: (ft.)
Crude oil 18,060
Natural gas 18,008
Dry hole 22,711

Cumulative number of total wells drilled as of 12/31/86: (excluding service wells)

Oil wells	107,600	78%
Gas wells	3,295	3%
Dry holes	26,435	19%
Total	137,330	100%

Cumulative crude oil wellhead value as of 12/31/86: (thous. $) $109,072,137

Cumulative production & new reserves as of 12/31/85: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	26,601	1,357	27,958	36,543
Production	20,800	1,199	21,999	30,919

Value of Oil and Gas

Average 1986 wellhead price:
Crude oil ($/bbl.) $11.90
Natural gas ($/Mcf) $2.13

Wellhead value of 1986 production: (thous. $)
Crude oil $4,839,314
Natural gas $999,916
Total $5,839,230

Average 1986 natural gas price to: ($/Mcf)
Residential consumers $5.07
Commercial consumers $5.61
Industrial consumers $3.92
Electric utilities $2.94
All consumers $4.27

Severance taxes paid in 1986 (thous. $) $14,022

1986 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	4	1,796	1,800
Gas	24	61	85
Dry	94	46	140
Service	- -	27	27
Total	122	1,930	2,052

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	31.6	3,555.3	3,586.9
Gas	146.3	429.1	575.4
Dry	690.6	237.6	928.2
Service	- -	53.8	53.8
Total	868.5	4,275.8	5,144.3

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 45
New-field wildcat footage (thous. ft.) 342.6

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	3rd	15th
Production	4th	6th
Reserves (1985)	3rd	8th

Seismic crew months worked 125
Average rotary rigs active 49

Number of producing wells: (12/31/86)
Crude oil 43,717
Flowing 1,419
Artificial lift 42,298
Natural gas 1,285
Total 45,002

Average production:	thous. bbls.	thous. b/d
Crude oil	406,665	1,114
NGL	10,500	29
Total	417,165	1,143

Natural gas marketed production (MMcf) 469,444
Average output per producing well:
Crude oil (bbls.) 9,302
Natural gas (Mcf) 365,326

Average number of employees in:
Oil and gas extraction 32,842
Refining 25,839
Transportation 12,644
Wholesale 17,049
Retail 62,588
Total petroleum industry 150,962

1985 Latest Data

Petroleum reserve position as of 12/31/85:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	511	30	541
Production	417	13	430
Net annual change	94	17	111
Proved reserves	5,801	158	5,959

Natural gas reserve position as of 12/31/85:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	119	245	364
Production	237	220	457
Net annual change	-118	25	-93
Proved reserves	3,682	1,942	5,624

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	537,238	187,126	96.21
Gas	121,762	915,503	127.70
Dry	257,503	770,967	138.10
Total	916,503	274,566	109.08

Number of producing strippers 29,230
Number of stripper well abandonments 1,182

Stripper well crude oil production:
(bbls.) 41,573,354
(b/d) 113,900
Percentage of oil produced by stripper wells 10%

Stripper oil reserves as of 12/31/85: (thous. bbls.)
Primary 198,935
Secondary 69,895
Total 268,830

Percentage of total value of principal mineral production:
Crude oil — ranked 1st 71%
Natural gas — ranked 2nd 13%

State Energy Contact

California Department of Conservation
Division of Oil and Gas
1416 Ninth Street, Room 1310
Sacramento, CA 95814
(914) 445-9686

COLORADO

■ Counties with oil and/or gas production

Background Information

Number of counties	63
With oil and/or gas production	33
First year of production:	
Crude oil	1862
Natural gas	1893
Year and amount of peak production:	
Crude oil — 58,516 thous. bbls.	1956
Natural gas — 209,892 MMcf	1982
Deepest well drilled: (ft.)	
Crude oil	12,704
Natural gas	17,632
Dry hole	22,092

Cumulative number of total wells drilled as of 12/31/86: (excluding service wells)

Oil wells	10,574	28%
Gas wells	7,033	19%
Dry holes	20,272	53%
Total	37,379	100%

Cumulative crude oil wellhead value as of 12/31/86: (thous. $) $10,991,636

Cumulative production & new reserves as of 12/31/85: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	1,631	343	1,974	7,526
Production	1,433	170	1,603	4,431

Value of Oil and Gas

Average 1986 wellhead price:	
Crude oil ($/bbl.)	$13.99
Natural gas ($/Mcf)	$2.05
Wellhead value of 1986 production: (thous. $)	
Crude oil	$410,033
Natural gas	$324,835
Total	$734,868

Average 1986 natural gas price to: ($/Mcf)	
Residential consumers	$5.04
Commercial consumers	$4.39
Industrial consumers	$3.67
Electric utilities	$3.07
All consumers	$4.58
Severance taxes paid in 1986 (thous. $)	$18,378

1986 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	37	262	299
Gas	18	392	410
Dry	223	85	308
Service	- -	2	2
Total	278	741	1,019

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	213.5	1,756.2	1,969.7
Gas	85.9	2,466.9	2,552.8
Dry	1,275.7	434.4	1,710.2
Service	- -	13.2	13.2
Total	1,575.2	4,670.8	6,245.9

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 174
New-field wildcat footage (thous. ft.) 1,002.7

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	10th	7th
Production	12th	10th
Reserves (1985)	12th	9th

Seismic crew months worked 84
Average rotary rigs active 24

Number of producing wells: (12/31/86)
Crude oil 5,502
Flowing 490
Artificial lift 5,012
Natural gas 3,573
Total 9,075

Average production:	thous. bbls.	thous. b/d
Crude oil	29,309	80
NGL	7,500	21
Total	36,809	101

Natural gas marketed production (MMcf) 158,456
Average output per producing well:
Crude oil (bbls.) 5,327
Natural gas (Mcf) 44,348

Average number of employees in:
Oil and gas extraction 20,078
Refining 609
Transportation 2,326
Wholesale 2,633
Retail 8,060
Total petroleum industry 33,706

1985 Latest Data

Petroleum reserve position as of 12/31/85:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	28	28	56
Production	28	10	38
Net annual change	0	18	18
Proved reserves	198	173	371

Natural gas reserve position as of 12/31/85:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	-11	144	133
Production	30	148	178
Net annual change	-41	-4	-45
Proved reserves	167	2,928	3,095

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	233,879	413,946	62.18
Gas	157,012	394,503	63.82
Dry	111,414	201,836	36.82
Total	502,305	331,554	54.32

Number of producing strippers 1,798
Number of stripper well abandonments 94

Stripper well crude oil production:
(bbls.) 2,682,341
(b/d) 7,349
Percentage of oil produced by stripper wells 9%

Stripper oil reserves as of 12/31/85: (thous. bbls.)
Primary 11,676
Secondary 6,898
Total 18,574

Percentage of total value of principal mineral production:
Crude oil — ranked 1st 37%
Natural gas — ranked 2nd 24%

State Energy Contact

Colorado Oil & Gas Conservation Commission
1580 Logan Street, Suite 380
Denver, CO 80203
(303) 866-3531

FLORIDA

☐ Counties with oil and/or gas production

Background Information

Number of counties 67
With oil and/or gas production 5

First year of production:
Crude oil 1943
Natural gas 1943

Year and amount of peak production:
Crude oil — 47,536 thous. bbls. 1978
Natural gas — 51,595 MMcf 1978

Deepest well drilled: (ft.)
Crude oil 16,130
Natural gas 17,452
Dry hole 23,264

Cumulative number of total wells drilled as of 12/31/86: (excluding service wells)

Oil wells	276	29%
Gas wells	5	1%
Dry holes	682	70%
Total	963	100%

Cumulative crude oil wellhead value as of 12/31/86: (thous. $) $7,982,494

Cumulative production & new reserves as of 12/31/85: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	640	78	718	554
Production	563	61	624	473

Value of Oil and Gas

Average 1986 wellhead price:
Crude oil ($/bbl.) $23.13
Natural gas ($/Mcf) $1.77

Wellhead value of 1986 production: (thous. $)
Crude oil $217,029
Natural gas $15,778
Total $232,807

Average 1986 natural gas price to: ($/Mcf)
Residential consumers $7.21
Commercial consumers $4.74
Industrial consumers $2.92
Electric utilities $2.10
All consumers $2.85

Severance taxes paid in 1986 (thous. $) $17,436

1986 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	1	6	7
Gas	0	0	0
Dry	5	2	7
Service	- -	0	0
Total	6	8	14

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	14.5	87.4	101.8
Gas	0.0	0.0	0.0
Dry	68.9	32.7	101.6
Service	- -	0.0	0.0
Total	83.4	120.1	203.5

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 6
New-field wildcat footage (thous. ft.) 83.4

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	26th	- -
Production	19th	23rd
Reserves (1985)	18th	23rd

Seismic crew months worked 6
Average rotary rigs active 2

Number of producing wells: (12/31/86)
Crude oil 114
Flowing 46
Artificial lift 68
Natural gas 0
Total 114

Average production:	thous. bbls.	thous. b/d
Crude oil	9,383	26
NGL	1,000	3
Total	10,383	29

Natural gas marketed production (MMcf) 8,914
Average output per producing well:
Crude oil (bbls.) 82,307
Natural gas (Mcf) ..... n/a

Average number of employees in:
Oil and gas extraction 780
Refining 254
Transportation 2,157
Wholesale 7,024
Retail 29,495
Total petroleum industry 39,710

1985 Latest Data

Petroleum reserve position as of 12/31/85:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	7	2	9
Production	12	2	14
Net annual change	-5	0	-5
Proved reserves	77	17	94

Natural gas reserve position as of 12/31/85:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	2	0	2
Production	11	0	11
Net annual change	-9	0	-9
Proved reserves	81	0	81

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	25,074	2,507,355	190.52
Gas	2,109	2,108,998	133.06
Dry	11,573	1,052,111	73.79
Total	38,756	1,761,626	127.36

Number of producing strippers 0
Number of stripper well abandonments 0

Stripper well crude oil production:
(bbls.) 0
(b/d) 0
Percentage of oil produced by stripper wells 0

Stripper oil reserves as of 12/31/85: (thous. bbls.)
Primary 0
Secondary 0
Total 0

Percentage of total value of principal mineral production:
Crude oil — ranked 2nd 17%
Natural gas — ranked 7th 1%

State Energy Contact

Florida Bureau of Geology
Division of Resource Management
903 West Tennessee Street
Tallahasee, FL 32304
(904) 488-4191

ILLINOIS

☐ Counties with oil and/or gas production

Background Information

Number of counties 102
With oil and/or gas production 47

First year of production:
Crude oil 1889
Natural gas 1882

Year and amount of peak production:
Crude oil —147,647 thous. bbls. 1940
Natural gas — 18,137 MMcf 1944

Deepest well drilled: (ft.)
Crude oil 5,405
Natural gas 4,832
Dry hole 14,942

Cumulative number of total wells drilled as of 12/31/86: (excluding service wells)

Oil wells	77,841	61%
Gas wells	1,493	1%
Dry holes	48,574	38%
Total	127,908	100%

Cumulative crude oil wellhead value as of 12/31/86: (thous. $) $14,423,883

Cumulative production & new reserves as of 12/31/85: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	3,364	n/a	--	n/a
Production	3,228	0	--	n/a

Value of Oil and Gas

Average 1986 wellhead price:
Crude oil ($/bbl.) $14.70
Natural gas ($/Mcf) $2.43

Wellhead value of 1986 production: (thous. $)
Crude oil $400,502
Natural gas $3,645
Total $404,147

Average 1986 natural gas price to: ($/Mcf)
Residential consumers $5.07
Commercial consumers $4.57
Industrial consumers $4.15
Electric utilities $4.75
All consumers $4.74

Severance taxes paid in 1986 ..... Not Applicable

1986 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	25	675	700
Gas	6	17	23
Dry	215	224	439
Service	- -	14	14
Total	246	930	1,176

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	69.7	1,486.1	1,555.8
Gas	2.9	14.3	17.2
Dry	418.3	497.9	916.2
Service	- -	18.0	18.0
Total	491.0	2,016.2	2,507.2

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 100
New-field wildcat footage (thous. ft.) 155.6

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	7th	22nd
Production	13th	28th
Reserves (1985)	15th	- -

Seismic crew months worked 1
Average rotary rigs active 6

Number of producing wells: (12/31/86)
Crude oil 32,025
Flowing 0
Artificial lift 32,025
Natural gas 217
Total 32,242

Average production:	thous. bbls.	thous. b/d
Crude oil	27,245	75
NGL	n/a	- -
Total	- -	- -

Natural gas marketed production (MMcf) 1,500
Average output per producing well:
Crude oil (bbls.) 851
Natural gas (Mcf) 6,912

Average number of employees in:
Oil and gas extraction 5,119
Refining 6,060
Transportation 9,396
Wholesale 9,939
Retail 25,279
Total petroleum industry 55,793

1985 Latest Data

Petroleum reserve position as of 12/31/85:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	4	n/a	4
Production	21	0	21
Net annual change	-17	- -	-17
Proved reserves	136	n/a	136

Natural gas reserve position as of 12/31/85:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	- -	- -	n/a
Production	- -	- -	n/a
Net annual change	- -	- -	- -
Proved reserves	- -	- -	n/a

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	126,144	98,937	40.53
Gas	594	25,825	43.68
Dry	45,537	55,873	22.93
Total	172,275	81,531	33.70

Number of producing strippers 30,593
Number of stripper well abandonments 390

Stripper well crude oil production:
(bbls.) 27,718,586
(b/d) 75,941
Percentage of oil produced by stripper wells 96%

Stripper oil reserves as of 12/31/85: (thous. bbls.)
Primary 49,280
Secondary 51,290
Total 100,570

Percentage of total value of principal mineral production:
Crude oil — ranked 1st 35%
Natural gas — ranked 7th ..... Less than 1%

State Energy Contact

Illinois Department of Mines and Minerals
704 William G. Stratton Building
Springfield, IL 62706
(217) 782-7756

INDIANA

☐ Counties with oil and/or gas production

Background Information

Number of counties 92
With oil and/or gas production 40

First year of production:
Crude oil 1889
Natural gas 1885

Year and amount of peak production:
Crude oil — 12,823 thous. bbls. 1953
Natural gas — 2,241 MMcf 1936

Deepest well drilled: (ft.)
Crude oil 4,508
Natural gas 3,335
Dry hole 7,980

Cumulative number of total wells drilled as of 12/31/86: (excluding service wells)

Oil wells	38,240	59%
Gas wells	2,163	3%
Dry holes	24,760	38%
Total	65,163	100%

Cumulative crude oil wellhead value as of 12/31/86: (thous. $) $2,427,763

Cumulative production & new reserves as of 12/31/85: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	530	n/a	- -	n/a
Production	495	0	- -	n/a

Value of Oil and Gas

Average 1986 wellhead price:
Crude oil ($/bbl.) $14.55
Natural gas ($/Mcf) $1.23

Wellhead value of 1986 production: (thous. $)
Crude oil $69,243
Natural gas $615
Total $69,858

Average 1986 natural gas price to: ($/Mcf)
Residential consumers $5.16
Commercial consumers $4.63
Industrial consumers $3.70
Electric utilities $4.51
All consumers $4.54

Severance taxes paid in 1986 (thous. $) $686

1986 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	19	153	172
Gas	5	14	19
Dry	102	74	176
Service	--	16	16
Total	126	257	383

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	41.6	210.5	252.1
Gas	10.6	15.1	25.7
Dry	172.9	115.8	288.7
Service	--	25.9	25.9
Total	225.1	367.4	592.5

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 34
New-field wildcat footage (thous. ft.) 53.7

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	12th	23rd
Production	22nd	29th
Reserves (1985)	23rd	--

Seismic crew months worked 0
Average rotary rigs active 1

Number of producing wells: (12/31/86)
Crude oil 7,610
Flowing 0
Artificial lift 7,610
Natural gas 1,289
Total 8,899

Average production:	thous. bbls.	thous. b/d
Crude oil	4,759	13
NGL	n/a	--
Total	--	--

Natural gas marketed production (MMcf) 500
Average output per producing well:
Crude oil (bbls.) 625
Natural gas (Mcf) 388

Average number of employees in:
Oil and gas extraction 681
Refining 2,802
Transportation 3,399
Wholesale 3,355
Retail 16,713
Total petroleum industry 26,950

1985 Latest Data

Petroleum reserve position as of 12/31/85:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	8	n/a	8
Production	6	0	6
Net annual change	2	--	2
Proved reserves	35	n/a	35

Natural gas reserve position as of 12/31/85:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	--	--	n/a
Production	--	--	n/a
Net annual change	--	--	--
Proved reserves	--	--	n/a

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	35,702	92,975	48.02
Gas	1,061	40,800	32.65
Dry	22,554	46,599	24.05
Total	59,317	66,350	34.61

Number of producing strippers 5,457
Number of stripper well abandonments 387

Stripper well crude oil production:
(bbls.) 4,103,938
(b/d) 11,244
Percentage of oil produced by stripper wells 79%

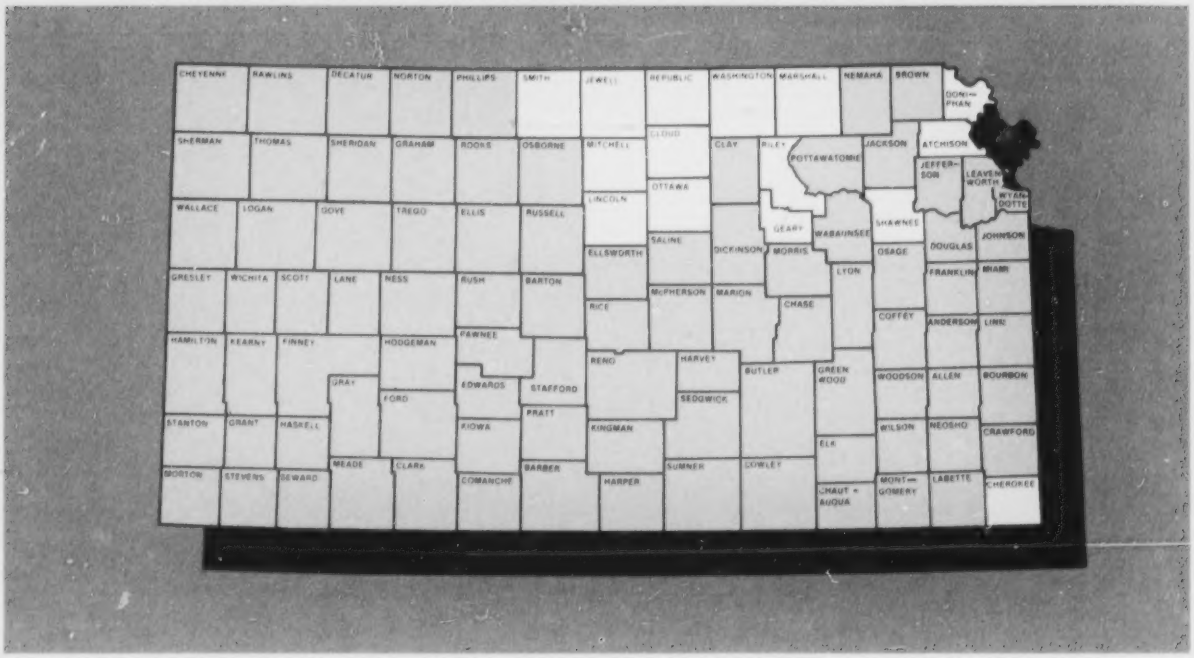
Stripper oil reserves as of 12/31/85: (thous. bbls.)
Primary 19,520
Secondary 14,726
Total 34,246

Percentage of total value of principal mineral production:
Crude oil — ranked 2nd 10%
Natural gas — ranked 8th ..... Less than 1%

State Energy Contact

Indiana Department of Natural Resources
Division of Oil and Gas
911 State Office Building, Room 911B
Indianapolis, IN 46204
(317) 232-4055

KANSAS



☐ Counties with oil and/or gas production

Background Information

Number of counties 105
With oil and/or gas production 90

First year of production:
Crude oil 1889
Natural gas 1882

Year and amount of peak production:
Crude oil — 124,204 thous. bbls. 1956
Natural gas — 899,955 MMcf 1970

Deepest well drilled: (ft.)
Crude oil 7,400
Natural gas 6,774
Dry hole 11,300

Cumulative number of total wells drilled as of 12/31/86: (excluding service wells)

Oil wells	118,508	51%
Gas wells	22,360	10%
Dry holes	91,205	39%
Total	232,073	100%

Cumulative crude oil wellhead value as of 12/31/86: (thous. $) $28,950,039

Cumulative production & new reserves as of 12/31/85: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	5,692	1,110	6,802	38,817
Production	5,269	737	6,006	28,973

Value of Oil and Gas

Average 1986 wellhead price:
Crude oil ($/bbl.) $14.02
Natural gas ($/Mcf) $1.15

Wellhead value of 1986 production: (thous. $)
Crude oil $939,817
Natural gas $515,584
Total $1,455,401

Average 1986 natural gas price to: ($/Mcf)
Residential consumers $3.92
Commercial consumers $3.03
Industrial consumers $3.45
Electric utilities $2.41
All consumers $3.43

Severance taxes paid in 1986 (thous. $) $170,283

1986 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	241	1,004	1,245
Gas	76	263	339
Dry	769	545	1,314
Service	- -	7	7
Total	1,086	1,819	2,905

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	956.5	2,735.5	3,691.9
Gas	299.7	622.1	921.8
Dry	2,924.1	1,790.5	4,714.7
Service	- -	23.3	23.3
Total	4,180.3	5,171.4	9,351.8

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 359
New-field wildcat footage (thous. ft.) 1,340.8

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	4th	8th
Production	8th	7th
Reserves (1985)	8th	7th

Seismic crew months worked 35
Average rotary rigs active 47

Number of producing wells: (12/31/86)
Crude oil 48,816
Flowing 73
Artificial lift 48,743
Natural gas 11,485
Total 60,301

Average production:	thous. bbls.	thous. b/d
Crude oil	67,034	184
NGL	15,015	41
Total	82,049	225

Natural gas marketed production (MMcf) 448,334
Average output per producing well:
Crude oil (bbls.) 1,373
Natural gas (Mcf) 39,036

Average number of employees in:
Oil and gas extraction 10,403
Refining 2,721
Transportation 4,841
Wholesale 2,604
Retail 7,752
Total petroleum industry 28,321

1985 Latest Data

Petroleum reserve position as of 12/31/85:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	110	-31	79
Production	64	20	84
Net annual change	46	-51	-5
Proved reserves	423	373	796

Natural gas reserve position as of 12/31/85:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	26	367	393
Production	21	509	530
Net annual change	5	-142	-137
Proved reserves	115	9,729	9,844

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	270,493	124,080	35.21
Gas	75,593	144,261	44.15
Dry	176,561	70,064	18.27
Total	522,647	100,047	27.42

Number of producing strippers 48,235
Number of stripper well abandonments 1,693

Stripper well crude oil production:
(bbls.) 50,861,413
(b/d) 139,346
Percentage of oil produced by stripper wells 67%

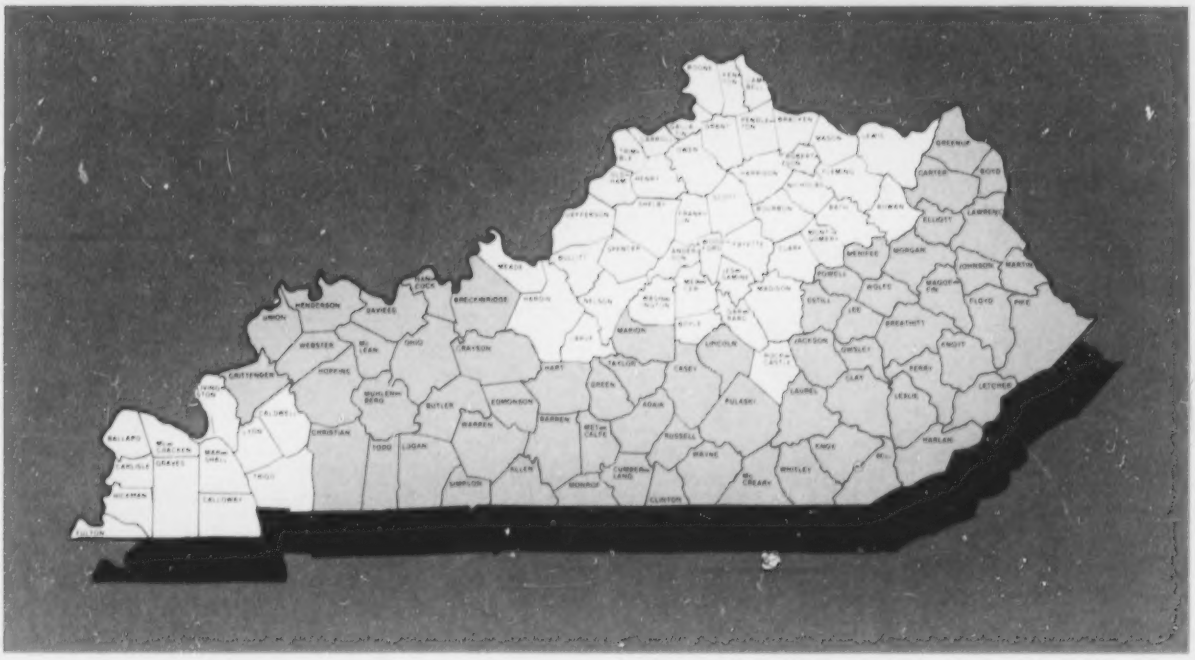
Stripper oil reserves as of 12/31/85: (thous. bbls.)
Primary 166,610
Secondary 125,690
Total 292,300

Percentage of total value of principal mineral production:
Crude oil — ranked 1st 66%
Natural gas — ranked 2nd 22%

State Energy Contact

Kansas Corporation Commission
202 West 1st Street
Colorado Derby Building, Suite 200
Wichita, KS 67202
(316) 263-3238

KENTUCKY



☐ Counties with oil and/or gas production

Background Information

Number of counties 120
With oil and/or gas production 65

First year of production:
Crude oil 1860
Natural gas 1888

Year and amount of peak production:
Crude oil — 27,272 thous. bbls. 1959
Natural gas — 96,459 MMcf 1947

Deepest well drilled: (ft.)
Crude oil 7,598
Natural gas 10,934
Dry hole 15,200

Cumulative number of total wells drilled as of 12/31/86: (excluding service wells)

Oil wells	51,239	52%
Gas wells	10,846	11%
Dry holes	37,312	37%
Total	99,397	100%

Cumulative crude oil wellhead value as of 12/31/86: (thous. $) $15,947,518

Cumulative production & new reserves as of 12/31/85: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	727	143	870	4,548
Production	685	116	801	3,740

Value of Oil and Gas

Average 1986 wellhead price:
Crude oil ($/bbl.) $14.20
Natural gas ($/Mcf) $1.88

Wellhead value of 1986 production: (thous. $)
Crude oil $91,945
Natural gas $141,000
Total $232,945

Average 1986 natural gas price to: ($/Mcf)
Residential consumers $4.89
Commercial consumers $4.83
Industrial consumers $4.02
Electric utilities $3.02
All consumers $4.68

Severance taxes paid in 1986 (thous. $) $12,507

1986 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	9	214	223
Gas	16	167	183
Dry	138	253	391
Service	- -	4	4
Total	163	638	801

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	16.5	284.9	301.4
Gas	35.0	395.2	430.2
Dry	205.6	295.9	501.5
Service	- -	5.1	5.1
Total	257.1	981.0	1,238.2

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 92
New-field wildcat footage (thous. ft.) 143.3

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	11th	10th
Production	21st	18th
Reserves (1985)	20th	19th

Seismic crew months worked 1
Average rotary rigs active 2

Number of producing wells: (12/31/86)
Crude oil 22,639
Flowing 0
Artificial lift 22,639
Natural gas 9,926
Total 32,565

Average production:	thous. bbls.	thous. b/d
Crude oil	6,475	18
NGL	1,000	3
Total	7,475	21

Natural gas marketed production (MMcf) 75,000
Average output per producing well:
Crude oil (bbls.) 286
Natural gas (Mcf) 7,556

Average number of employees in:
Oil and gas extraction 2,497
Refining 3,568
Transportation 3,197
Wholesale 2,821
Retail 10,253
Total petroleum industry 22,336

1985 Latest Data

Petroleum reserve position as of 12/31/85:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	7	5	12
Production	6	2	8
Net annual change	1	3	4
Proved reserves	42	27	69

Natural gas reserve position as of 12/31/85:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	0	216	216
Production	2	53	55
Net annual change	-2	163	161
Proved reserves	13	793	806

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	35,752	35,363	27.93
Gas	32,563	83,282	42.59
Dry	20,624	22,865	17.40
Total	88,940	38,602	27.53

Number of producing strippers 17,674
Number of stripper well abandonments 391

Stripper well crude oil production:
(bbls.) 6,695,979
(b/d) 18,345
Percentage of oil produced by stripper wells 86%

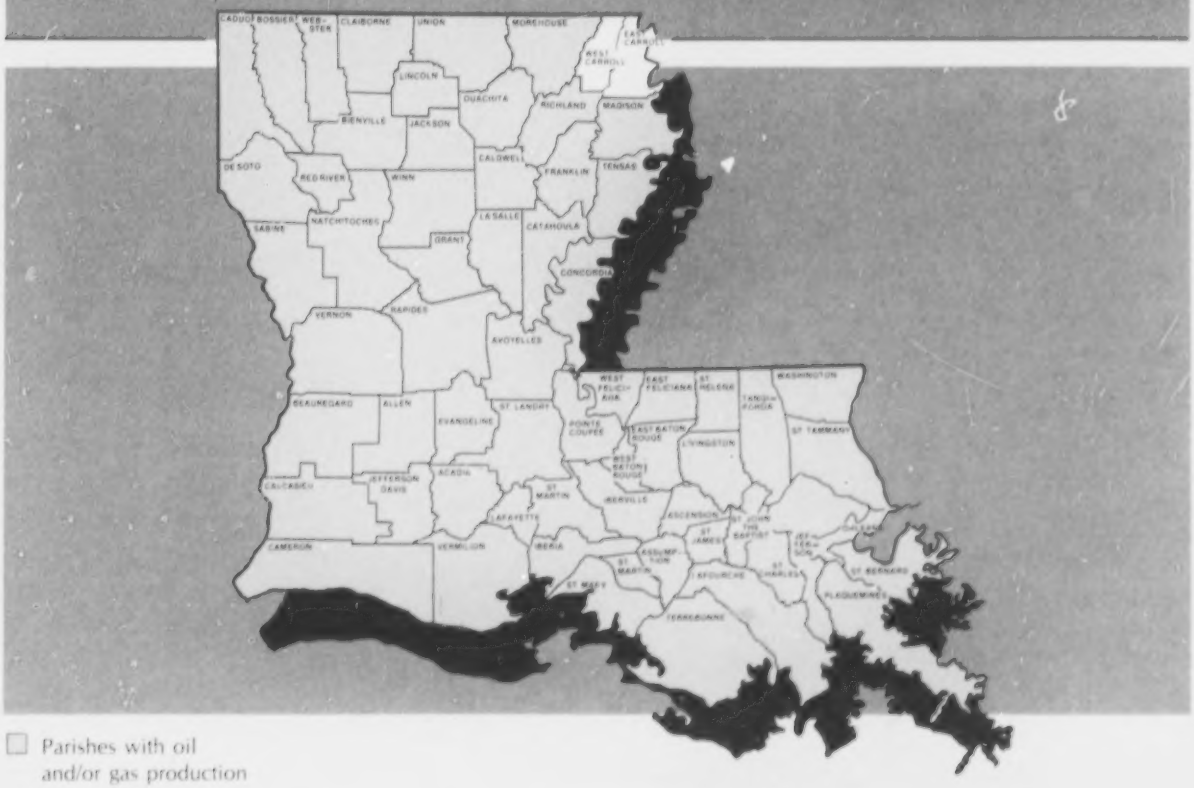
Stripper oil reserves as of 12/31/85: (thous. bbls.)
Primary 10,539
Secondary 25,952
Total 36,491

Percentage of total value of principal mineral production:
Crude oil — ranked 1st 4%
Natural gas — ranked 2nd 4%

State Energy Contact

Kentucky Department of Mines and Minerals
Oil and Gas Division
P.O. Box 690
Lexington, KY 40586
(606) 257-3812

LOUISIANA



☐ Parishes with oil and/or gas production

Background Information

Number of parishes 64
With oil and/or gas production 62

First year of production:
Crude oil 1902
Natural gas 1905

Year and amount of peak production:
Crude oil — 935,243 thous. bbls. 1971
Natural gas — 8,242,423 MMcf 1973

Deepest well drilled: (ft.)
Crude oil 22,856
Natural gas 21,862
Dry hole 26,500

Cumulative number of total wells drilled as of 12/31/86: (excluding service wells)

Oil wells	82,564	46%
Gas wells	30,387	17%
Dry holes	67,394	37%
Total	180,345	100%

Cumulative crude oil wellhead value as of 12/31/86: (thous. $) $165,918,095

Cumulative production & new reserves as of 12/31/85: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	25,322	3,654	28,976	228,978
Production	22,680	2,498	25,178	187,893

Value of Oil and Gas

Average 1986 wellhead price:
Crude oil ($/bbl.) $15.32
Natural gas ($/Mcf) $2.17

Wellhead value of 1986 production: (thous. $)
Crude oil $7,845,495
Natural gas $10,608,071
Total $18,453,566

Average 1986 natural gas price to: ($/Mcf)
Residential consumers $5.78
Commercial consumers $5.32
Industrial consumers $2.01
Electric utilities $1.94
All consumers $2.38

Severance taxes paid in 1986 (thous. $) $653,594

1986 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	20	993	1,013
Gas	48	455	503
Dry	336	707	1,043
Service	- -	4	4
Total	404	2,159	2,563

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	185.2	4,327.5	4,512.6
Gas	570.7	3,155.1	3,725.7
Dry	3,438.0	4,681.7	8,119.7
Service	- -	25.1	25.1
Total	4,193.8	12,189.3	16,383.2

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 310
New-field wildcat footage (thous. ft.) 3,138.6

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	6th	5th
Production	3rd	2nd
Reserves (1985)	4th	2nd

Seismic crew months worked 157
Average rotary rigs active 142

Number of producing wells: (12/31/86)
Crude oil 24,635
Flowing 2,205
Artificial lift 22,430
Natural gas 16,479
Total 41,114

Average production:	thous. bbls.	thous. b/d
Crude oil	512,108	1,403
NGL	110,000	301
Total	622,108	1,704

Natural gas marketed production (MMcf) 4,888,512
Average output per producing well:
Crude oil (bbls.) 20,788
Natural gas (Mcf) 296,651

Average number of employees in:
Oil and gas extraction 60,900
Refining 12,100
Transportation 7,700
Wholesale 5,200
Retail 8,000
Total petroleum industry 93,900

1985 Latest Data

Petroleum reserve position as of 12/31/85:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	433	114	547
Production	452	146	598
Net annual change	-19	-32	-51
Proved reserves	2,642	1,156	3,798

Natural gas reserve position as of 12/31/85:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	1,123	2,610	3,733
Production	895	4,101	4,996
Net annual change	228	-1,491	-1,263
Proved reserves	7,667	33,418	41,085

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	1,380,256	545,340	144.10
Gas	1,363,527	1,260,191	184.14
Dry	1,849,949	987,693	129.54
Total	4,593,732	837,355	146.93

Number of producing strippers 16,000
Number of stripper well abandonments 1,213

Stripper well crude oil production:
(bbls.) 9,000,000
(b/d) 24,658
Percentage of oil produced by stripper wells 7%

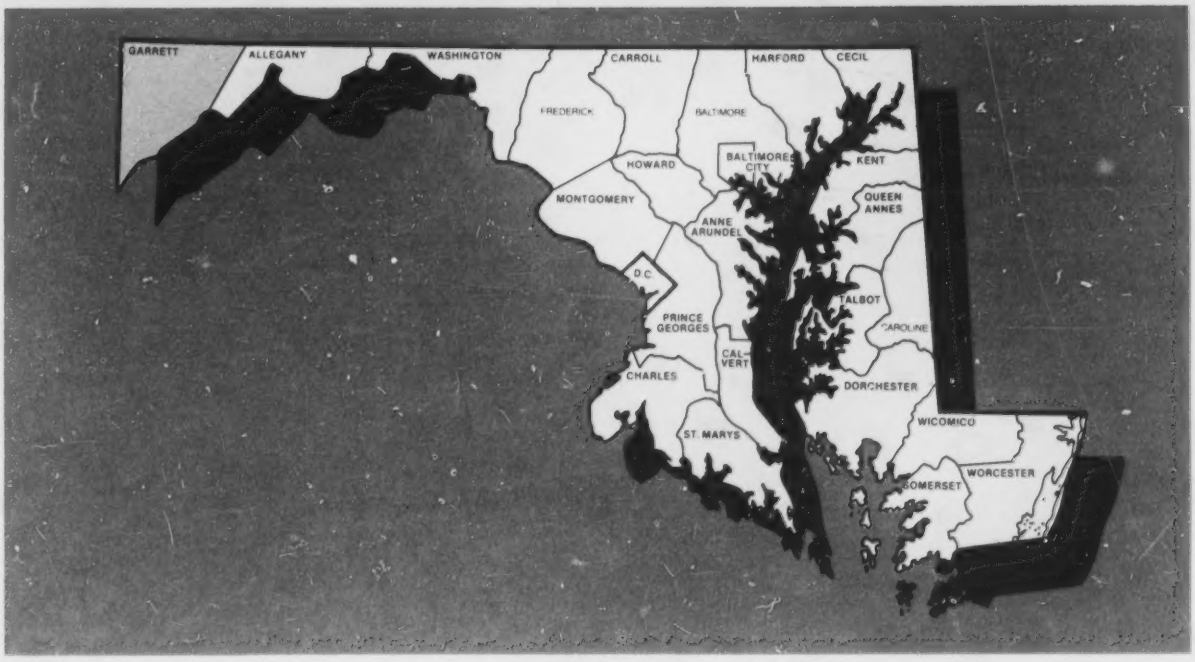
Stripper oil reserves as of 12/31/85: (thous. bbls.)
Primary 64,170
Secondary 61,655
Total 125,825

Percentage of total value of principal mineral production:
Crude oil — ranked 1st 50%
Natural gas — ranked 2nd 48%

State Energy Contact

Louisiana Department of Natural Resources
P.O.Box 44396, Capitol Station
Baton Rouge, LA 70804
(504) 342-4500

MARYLAND



☐ Counties with oil and/or gas production

Background Information

Number of counties 23
With oil and/or gas production 1

First year of production:
Crude oil ..... Not Applicable
Natural gas 1951

Year and amount of peak production:
Crude oil ..... Not Applicable
Natural gas — 4,543 MMcf 1959

Deepest well drilled: (ft.)
Crude oil ..... Not Applicable
Natural gas 8,675
Dry hole 11,617

Cumulative number of total wells drilled as of 12/31/86: (excluding service wells)

Oil wells	0	0%
Gas wells	81	48%
Dry holes	88	52%
Total	169	100%

Cumulative crude oil wellhead value as of 12/31/86: (thous. $) ..... Not Applicable

Cumulative production & new reserves as of 12/31/85: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	0	0	- -	n/a
Production	0	0	- -	n/a

Value of Oil and Gas

Average 1986 wellhead price:
Crude oil ($/bbl.) ..... Not Applicable
Natural gas ($/Mcf) $0.58

Wellhead value of 1986 production: (thous. $)
Crude oil ..... Not Applicable
Natural gas $23
Total $23

Average 1986 natural gas price to: ($/Mcf)
Residential consumers $6.69
Commercial consumers $5.52
Industrial consumers $5.43
Electric utilities $2.77
All consumers $6.17

Severance taxes paid in 1986 (thous. $) $1

1986 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	0	0	0
Gas	0	0	0
Dry	1	0	1
Service	- -	0	0
Total	1	0	1

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	0.0	0.0	0.0
Gas	0.0	0.0	0.0
Dry	5.3	0.0	5.3
Service	- -	0.0	0.0
Total	5.3	0.0	5.3

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 1
New-field wildcat footage (thous. ft.) 5.3

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	- -	- -
Production	- -	31st
Reserves (1985)	- -	- -

Seismic crew months worked 1
Average rotary rigs active 0

Number of producing wells: (12/31/86)
Crude oil 0
Flowing 0
Artificial lift 0
Natural gas ..... n/a
Total 0

Average production:	thous. bbls.	thous. b/d
Crude oil	0	- -
NGL	0	- -
Total	0	- -

Natural gas marketed production (MMcf) 40
Average output per producing well:
Crude oil (bbls.) ..... Not Applicable
Natural gas (Mcf) 0

Average number of employees in:
Oil and gas extraction 21
Refining 302
Transportation 1,139
Wholesale 3,105
Retail 13,342
Total petroleum industry 17,909

1985 Latest Data

Petroleum reserve position as of 12/31/85:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	0	0	- -
Production	0	0	- -
Net annual change	- -	- -	- -
Proved reserves	0	0	- -

Natural gas reserve position as of 12/31/85:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	0	- -	n/a
Production	0	- -	- -
Net annual change	- -	- -	- -
Proved reserves	0	- -	n/a

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	- -	- -	- -
Gas	- -	- -	- -
Dry	- -	- -	- -
Total	n/a	- -	- -

Number of producing strippers 0
Number of stripper well abandonments 0

Stripper well crude oil production:
(bbls.) 0
(b/d) 0
Percentage of oil produced by stripper wells 0

Stripper oil reserves as of 12/31/85: (thous. bbls.)
Primary 0
Secondary 0
Total 0

Percentage of total value of principal mineral production.
Crude oil ..... Not Applicable
Natural gas — ranked 7th ..... Less than 1%

State Energy Contact

Maryland Geological Survey
2300 Saint Paul Street
Baltimore, MD 21218
(301) 554-5500

MICHIGAN

☐ Counties with oil and/or gas production

Background Information

Number of counties 83
With oil and/or gas production 60

First year of production:
Crude oil 1889
Natural gas 1909

Year and amount of peak production:
Crude oil — 34,862 thous. bbls. 1979
Natural gas — 159,731 MMcf 1979

Deepest well drilled: (ft.)
Crude oil 10,515
Natural gas 11,252
Dry hole 17,466

Cumulative number of total wells drilled as of 12/31/86: (excluding service wells)

Oil wells	14,025	39%
Gas wells	2,788	8%
Dry holes	19,001	53%
Total	35,814	100%

Cumulative crude oil wellhead value as of 12/31/86: (thous. $) $9,664,635

Cumulative production & new reserves as of 12/31/85: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	1,178	182	1,360	2,108
Production	987	115	1,102	1,044

Value of Oil and Gas

Average 1986 wellhead price:
Crude oil ($/bbl.) $14.61
Natural gas ($/Mcf) $2.40

Wellhead value of 1986 production: (thous. $)
Crude oil $375,302
Natural gas $304,819
Total $680,121

Average 1986 natural gas price to: ($/Mcf)
Residential consumers $5.83
Commercial consumers $5.47
Industrial consumers $4.86
Electric utilities $1.63
All consumers $5.51

Severance taxes paid in 1986 (thous. $) $64,766

1986 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	26	92	118
Gas	19	47	66
Dry	201	104	305
Service	- -	8	8
Total	246	251	497

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	103.2	337.8	441.0
Gas	139.1	181.2	320.3
Dry	991.4	438.6	1,430.0
Service	- -	22.0	22.0
Total	1,233.7	979.5	2,213.3

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 225
New-field wildcat footage (thous. ft.) 1,080.4

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	15th	16th
Production	15th	15th
Reserves (1985)	13th	16th

Seismic crew months worked 259
Average rotary rigs active 24

Number of producing wells: (12/31/86)
Crude oil 4,885
Flowing 635
Artificial lift 4,250
Natural gas 740
Total 5,625

Average production:	thous. bbls.	thous. b/d
Crude oil	25,688	70
NGL	6,985	19
Total	32,673	89

Natural gas marketed production (MMcf) 127,008
Average output per producing well:
Crude oil (bbls.) 5,259
Natural gas (Mcf) 171,632

Average number of employees in:
Oil and gas extraction 4,093
Refining 2,228
Transportation 7,355
Wholesale 5,551
Retail 22,042
Total petroleum industry 41,269

1985 Latest Data

Petroleum reserve position as of 12/31/85:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	41	-8	33
Production	30	9	39
Net annual change	11	-17	-6
Proved reserves	191	67	258

Natural gas reserve position as of 12/31/85:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	-12	25	13
Production	73	69	142
Net annual change	-85	-44	-129
Proved reserves	689	375	1,064

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	70,460	289,961	69.63
Gas	22,641	526,542	101.09
Dry	141,268	254,537	51.25
Total	234,370	278,680	58.70

Number of producing strippers 3,475
Number of stripper well abandonments 115

Stripper well crude oil production:
(bbls.) 3,272,225
(b/d) 8,965
Percentage of oil produced by stripper wells 11%

Stripper oil reserves as of 12/31/85: (thous. bbls.)
Primary 21,694
Secondary 28,756
Total 50,450

Percentage of total value of principal mineral production:
Crude oil — ranked 2nd 28%
Natural gas — ranked 3rd 19%

State Energy Contact

Michigan Geological Survey
Dept. of National Resources, P.O. Box 30028
Lansing, MI 48909
(517) 334-6907

MISSISSIPPI

☐ Counties with oil and/or gas production

Background Information

Number of counties 82
With oil and/or gas production 45

First year of production:
Crude oil 1889
Natural gas 1923

Year and amount of peak production:
Crude oil — 65,119 thous. bbls. 1970
Natural gas — 181,238 MMcf 1981

Deepest well drilled: (ft.)
Crude oil 21,533
Natural gas 21,727
Dry hole 25,500

Cumulative number of total wells drilled as of 12/31/86: (excluding service wells)

Oil wells	7,435	32%
Gas wells	1,315	6%
Dry holes	14,337	62%
Total	23,087	100%

Cumulative crude oil wellhead value as of 12/31/86: (thous. $) $11,755,076

Cumulative production & new reserves as of 12/31/85: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	2,269	112	2,381	7,875
Production	2,085	100	2,185	6,511

Value of Oil and Gas

Average 1986 wellhead price:
Crude oil ($/bbl.) $13.64
Natural gas ($/Mcf) $2.13

Wellhead value of 1986 production: (thous. $)
Crude oil $409,159
Natural gas $303,985
Total $713,144

Average 1986 natural gas price to: ($/Mcf)
Residential consumers $5.37
Commercial consumers $5.35
Industrial consumers $2.85
Electric utilities $2.27
All consumers $3.33

Severance taxes paid in 1986 (thous. $) $49,355

1986 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	16	63	79
Gas	3	30	33
Dry	90	91	181
Service	- -	1	1
Total	109	185	294

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	167.0	539.0	706.0
Gas	20.1	340.6	360.7
Dry	765.3	788.6	1,553.8
Service	- -	17.5	17.5
Total	952.4	1,685.6	2,638.0

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 104
New-field wildcat footage (thous. ft.) 900.7

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	19th	21st
Production	11th	12th
Reserves (1985)	14th	14th

Seismic crew months worked 38
Average rotary rigs active 15

Number of producing wells: (12/31/86)
Crude oil 2,235
Flowing 179
Artificial lift 2,056
Natural gas 555
Total 2,790

Average production:	thous. bbls.	thous. b/d
Crude oil	29,997	82
NGL	1,000	3
Total	30,997	85

Natural gas marketed production (MMcf) 142,716
Average output per producing well:
Crude oil (bbls.) 13,421
Natural gas (Mcf) 257,146

Average number of employees in:
Oil and gas extraction 6,112
Refining 1,675
Transportation 2,074
Wholesale 2,697
Retail 5,347
Total petroleum industry 17,905

1985 Latest Data

Petroleum reserve position as of 12/31/85:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	11	-2	9
Production	28	1	29
Net annual change	-17	-3	-20
Proved reserves	184	12	196

Natural gas reserve position as of 12/31/85:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	3	17	20
Production	12	140	152
Net annual change	-9	-123	-132
Proved reserves	105	1,259	1,364

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	85,155	549,390	61.93
Gas	49,612	954,074	109.48
Dry	194,324	536,808	63.60
Total	329,092	578,368	67.38

Number of producing strippers 811
Number of stripper well abandonments 98

Stripper well crude oil production:
(bbls.) 1,721,339
(b/d) 4,716
Percentage of oil produced by stripper wells 6%

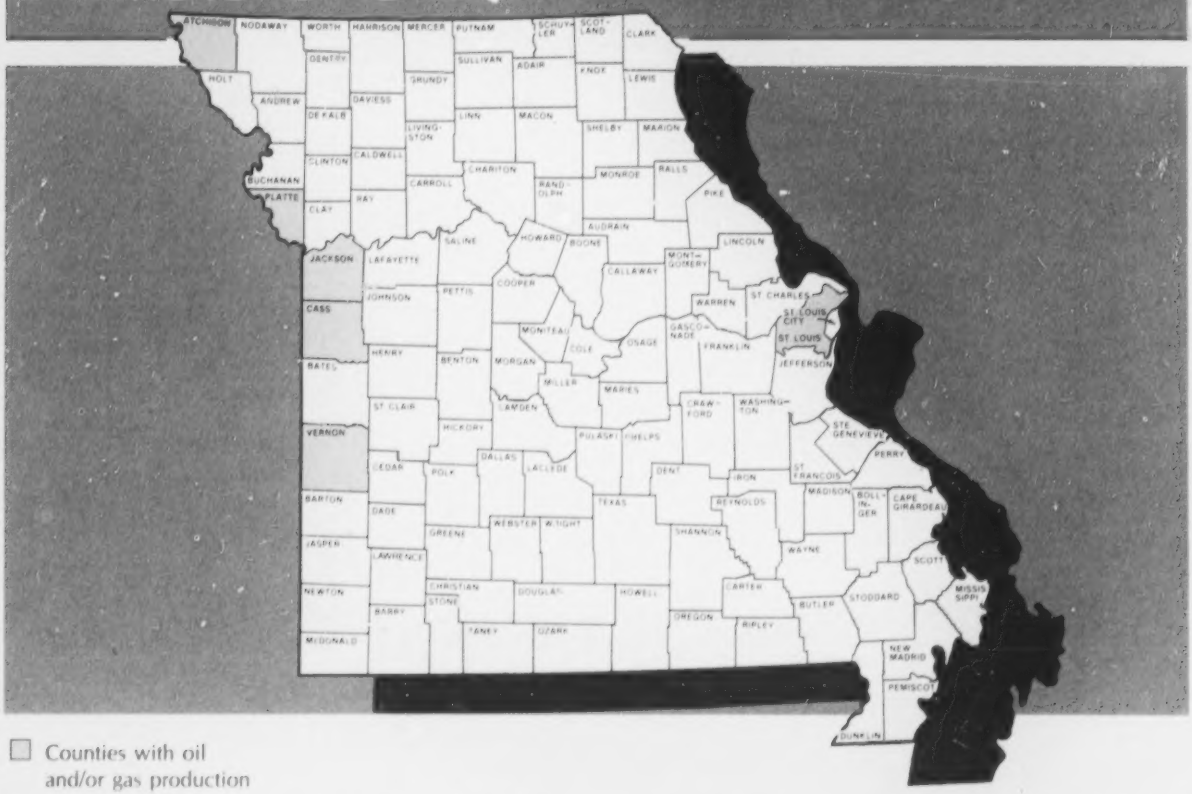
Stripper oil reserves as of 12/31/85: (thous. bbls.)
Primary 13,960
Secondary 2,660
Total 16,620

Percentage of total value of principal mineral production:
Crude oil — ranked 1st 58%
Natural gas — ranked 2nd 34%

State Energy Contact

Mississippi State Oil and Gas Board
P.O. Box 1332
Jackson, MS 39215
(601) 359-3725

MISSOURI



☐ Counties with oil and/or gas production

Background Information

Number of counties 114
With oil and/or gas production 6

First year of production:
Crude oil 1888
Natural gas 1887

Year and amount of peak production:
Crude oil — 285 thous bbls. 1984
Natural gas — 1,369 MMcf 1938

Deepest well drilled: (ft.)
Crude oil 2,975
Natural gas 765
Dry hole 4,906

Cumulative number of total wells drilled as of 12/31/86: (excluding service wells)

Oil wells	724	37%
Gas wells	196	10%
Dry holes	1,055	53%
Total	1,975	100%

Cumulative crude oil wellhead value as of 12/31/86: (tnous. $) $55,624

Cumulative production & new reserves as of 12/31/85: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	n/a	0	- -	n/a
Production	n/a	0	- -	n/a

Value of Oil and Gas

Average 1986 wellhead price:
Crude oil ($/bbl.) $15.25
Natural gas ($/Mcf) $3.75

Wellhead value of 1986 production: (thous. $)
Crude oil $1,678
Natural gas $19
Total $1,697

Average 1986 natural gas price to: ($/Mcf)
Residential consumers $4.94
Commercial consumers $4.36
Industrial consumers $3.52
Electric utilities $2.84
All consumers $4.47

Severance taxes paid in 1986 ..... Not Applicable

1986 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	0	5	5
Gas	0	0	0
Dry	5	0	5
Service	- -	0	0
Total	5	5	10

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	0.0	1.0	1.0
Gas	0.0	0.0	0.0
Dry	16.0	0.0	16.0
Service	- -	0.0	0.0
Total	16.0	1.0	16.8

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 5
New-field wildcat footage (thous. ft.) 16.0

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	27th	- -
Production	30th	32nd
Reserves (1985)	- -	- -

Seismic crew months worked 0
Average rotary rigs active 0

Number of producing wells: (12/31/86)
Crude oil 450
Flowing 0
Artificial lift 450
Natural gas 0
Total 450

Average production:	thous. bbls.	thous. b/d
Crude oil	110	- -
NGL	0	- -
Total	110	- -

Natural gas marketed production (MMcf) 5
Average output per producing well:
Crude oil (bbls.) 244
Natural gas (Mcf) ..... n/a

Average number of employees in:
Oil and gas extraction 108
Refining 409
Transportation 5,148
Wholesale 5,733
Retail 17,985
Total petroleum industry 29,433

1985 Latest Data

Petroleum reserve position as of 12/31/85:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	n/a	0	- -
Production	- -	0	- -
Net annual change	- -	- -	- -
Proved reserves	n/a	0	0

Natural gas reserve position as of 12/31/85:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	- -	- -	0
Production	- -	- -	- -
Net annual change	- -	- -	- -
Proved reserves	- -	- -	n/a

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	- -	- -	- -
Gas	- -	- -	- -
Dry	- -	- -	- -
Total	n/a	- -	- -

Number of producing strippers 429
Number of stripper well abandonments 0

Stripper well crude oil production:
(bbls.) 250,029
(b/d) 685
Percentage of oil produced by stripper wells 100%

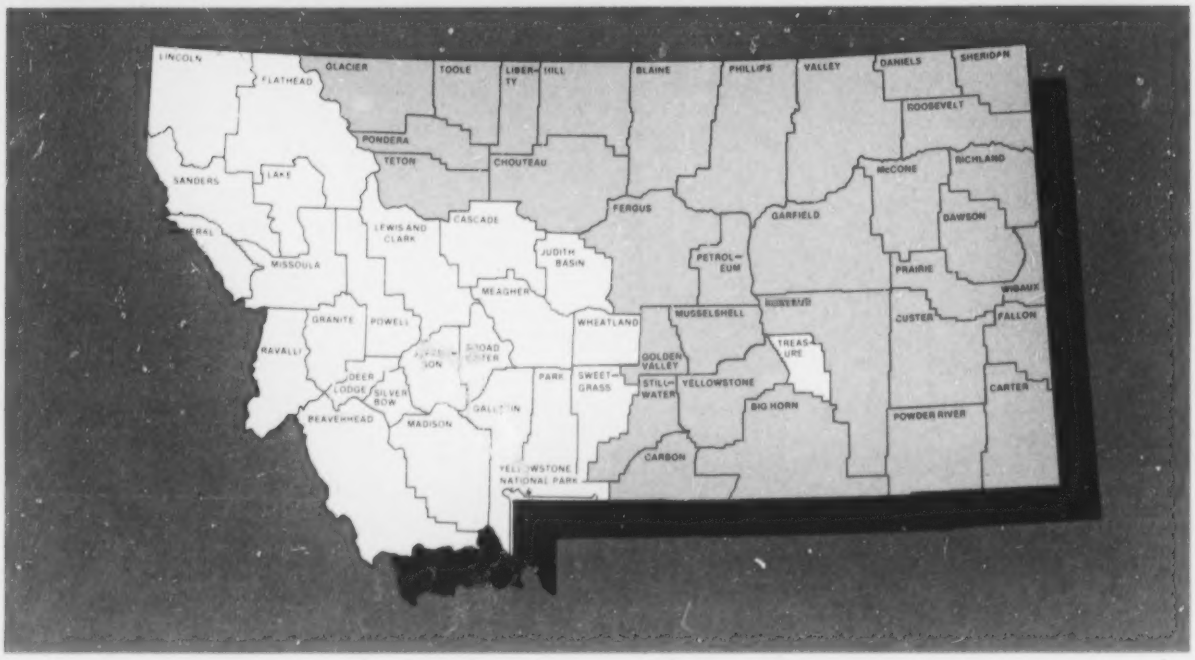
Stripper oil reserves as of 12/31/85: (thous. bbls.)
Primary 1,590
Secondary 1,850
Total 3,440

Percentage of total value of principal mineral production:
Crude oil — ranked 12th 1%
Natural gas — ranked 14th ..... Less than 1%

State Energy Contact

Missouri Department of Economic Development
Oil and Gas Research Division
P.O. Box 118
Jefferson City, MO 65101
(314) 751-3674

MONTANA



☐ Counties with oil and/or gas production

Background Information

Number of counties 56
With oil and/or gas production 32

First year of production:
Crude oil 1916
Natural gas 1915

Year and amount of peak production:
Crude oil — 48,460 thous. bbls. 1968
Natural gas — 56,565 MMcf 1981

Deepest well drilled: (ft.)
Crude oil 13,012
Natural gas 21,750
Dry hole 17,774

Cumulative number of total wells drilled as of 12/31/86: (excluding service wells)

Oil wells	10,561	37%
Gas wells	4,345	15%
Dry holes	13,801	48%
Total	28,707	100%

Cumulative crude oil wellhead value as of 12/31/86: (thous. $) $9,403,147

Cumulative production & new reserves as of 12/31/85: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	1,428	51	1,479	2,975
Production	1,196	30	1,226	2,091

Value of Oil and Gas

Average 1986 wellhead price:
Crude oil ($/bbl.) $13.60
Natural gas ($/Mcf) $2.05

Wellhead value of 1986 production: (thous. $)
Crude oil $368,179
Natural gas $101,457
Total $469,636

Average 1986 natural gas price to: ($/Mcf)
Residential consumers $4.52
Commercial consumers $4.65
Industrial consumers $3.97
Electric utilities $1.03
All consumers $4.42

Severance taxes paid in 1986 (thous. $) $116,054

Membership Categories

Membership in IPAA is open to any individual, firm or company whose activities are consistent with the objectives of the Association and who subscribes to the Constitution and Bylaws of the organization.

Annual membership dues are determined by the member and should be an amount in direct relationship to the member's interest in the industry. Minimum dues have been set at $200 annually by the IPAA Executive Committee.

Members who pay $1,500 or more in annual dues are enrolled in the Roustabout Club, the most prestigious category of membership. These members consider their annual dues an investment in the future of the oil and natural gas industry. As recognition, Roustabout Club members receive a laser-cut walnut membership wall plaque, preferential registration and reservations at all national meetings, distinctive name badges and are invited to attend special functions at these meetings.

All members who pay more than minimum annual dues are entitled to name one Associate Member for each additional increment of $200 in annual dues. For instance, a member who pays $1,000 in dues may name four Associate Members.

Regular, Roustabout and Associate members are encouraged to serve on committees and participate fully in the affairs of the Association. All members are eligible for election to the Board of Directors, the Executive Committee and as area Vice President.

IPAA members receive latest information on taxes, natural gas, environmental concerns, and public lands, as well as industry data from IPAA's Information Services Department on supply and demand statistics, drilling costs surveys, rig activity, and prices. In addition all members receive the *Executive Report*, the monthly newsletter; *Petroleum Independent*, the bi-monthly magazine; *The Oil and Gas Producing Industry In Your State*, the state-by-state annual reference summary of industry activity and statistics; and other material to keep abreast of national industry concerns.

MEMBERSHIP APPLICATION

Independent Petroleum Association of America
P.O. Box 90317, Washington, D.C. 20090-0317

Name _____

Company _____

Address _____

City _____ State _____ ZIP _____

Telephone Number _____

Sponsor's Name _____ City _____

METHOD OF PAYMENT: ☐ Check enclosed for $_____

☐ Charge to my: ☐ Visa ☐ MasterCard

ACCOUNT NUMBER _____ EXPIRATION DATE _____

SIGNATURE _____ NAME ON CARD _____

$22.50 of each member's dues pays for a one-year subscription to Petroleum Independent, IPAA's official publication

MEMBERSHIP APPLICATION

Independent Petroleum Association of America
P.O. Box 90317, Washington, D.C. 20090-0317

Name _____

Company _____

Address _____

City _____ State _____ ZIP _____

Telephone Number _____

Sponsor's Name _____ City _____

METHOD OF PAYMENT: ☐ Check enclosed for $_____

☐ Charge to my: ☐ Visa ☐ MasterCard

ACCOUNT NUMBER _____ EXPIRATION DATE _____

SIGNATURE _____ NAME ON CARD _____

$22.50 of each member's dues pays for a one-year subscription to Petroleum Independent, IPAA's official publication

MEMBERSHIP APPLICATION

Independent Petroleum Association of America
P.O. Box 90317, Washington, D.C. 20090-0317

Name _____

Company _____

Address _____

City _____ State _____ ZIP _____

Telephone Number _____

Sponsor's Name _____ City _____

METHOD OF PAYMENT: ☐ Check enclosed for $_____

☐ Charge to my: ☐ Visa ☐ MasterCard

ACCOUNT NUMBER _____ EXPIRATION DATE _____

SIGNATURE _____ NAME ON CARD _____

$22.50 of each member's dues pays for a one-year subscription to Petroleum Independent, IPAA's official publication

TEAR OFF CARD, ENCLOSE PAYMENT IN AN ENVELOPE AND MAIL TO:

IPAA
Membership Department
P.O. Box 90317
Washington, D.C. 20090-0317

Invest in your future JOIN IPAA

TEAR OFF CARD, ENCLOSE PAYMENT IN AN ENVELOPE AND MAIL TO:

IPAA
Membership Department
P.O. Box 90317
Washington, D.C. 20090-0317

Learn new profitable ideas for your company JOIN IPAA

TEAR OFF CARD, ENCLOSE PAYMENT IN AN ENVELOPE AND MAIL TO:

IPAA
Membership Department
P.O. Box 90317
Washington, D.C. 20090-0317

Find solutions to your business problems JOIN IPAA

1986 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	15	56	71
Gas	5	88	93
Dry	116	57	173
Service	- -	0	0
Total	136	201	337

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	138.0	265.1	403.1
Gas	7.4	148.5	155.9
Dry	560.7	134.3	695.1
Service	- -	0.0	0.0
Total	706.1	548.0	1,254.0

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 110
New-field wildcat footage (thous. ft.) 579.4

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	21st	14th
Production	14th	20th
Reserves (1985)	11th	17th

Seismic crew months worked 47
Average rotary rigs active 10

Number of producing wells: (12/31/86)
Crude oil 3,933
Flowing 362
Artificial lift 3,571
Natural gas 1,818
Total 5,751

Average production:	thous. bbls.	thous. b/d
Crude oil	27,072	74
NGL	920	3
Total	27,992	77

Natural gas marketed production (MMcf) 49,491
Average output per producing well:
Crude oil (bbls.) 6,883
Natural gas (Mcf) 27,223

Average number of employees in:
Oil and gas extraction 2,314
Refining 857
Transportation 383
Wholesale 1,347
Retail 3,031
Total petroleum industry 7,932

1985 Latest Data

Petroleum reserve position as of 12/31/85:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	38	4	42
Production	30	1	31
Net annual change	8	3	11
Proved reserves	232	21	253

Natural gas reserve position as of 12/31/85:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	25	86	111
Production	11	41	52
Net annual change	14	45	59
Proved reserves	91	793	884

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	71,433	323,228	62.09
Gas	5,663	69,919	37.23
Dry	85,863	291,060	52.66
Total	162,960	272,964	55.56

Number of producing strippers 3,376
Number of stripper well abandonments 450

Stripper well crude oil production:
(bbls.) 2,936,554
(b/d) 805
Percentage of oil produced by stripper wells 10%

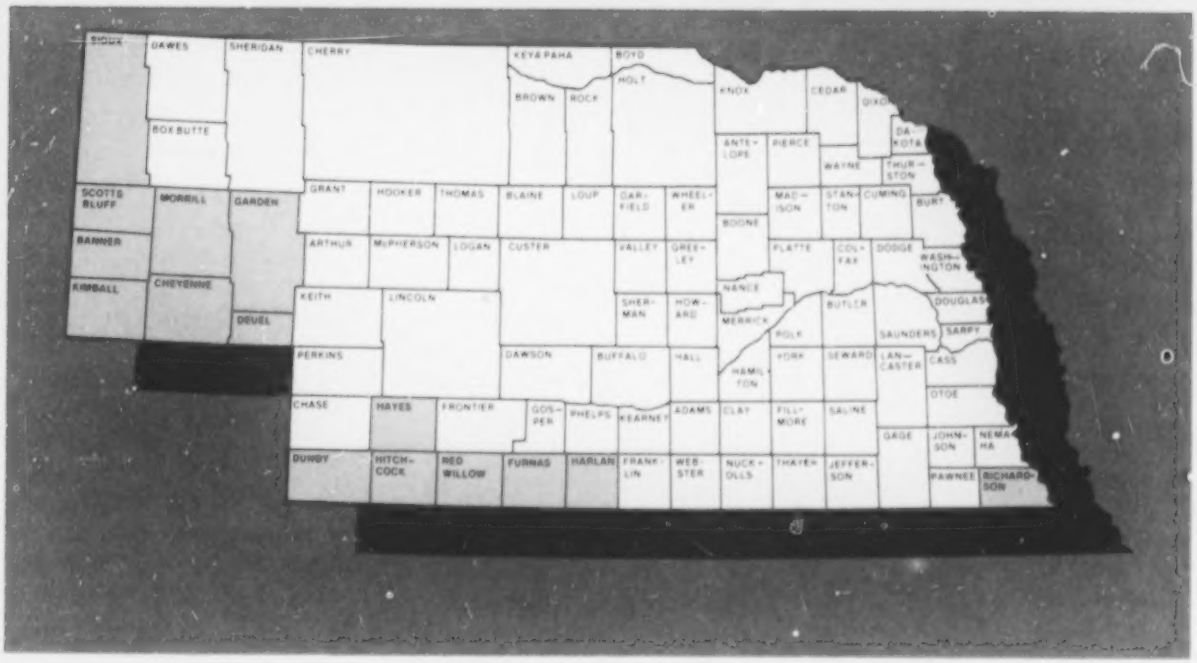
Stripper oil reserves as of 12/31/85: (thous. bbls.)
Primary 29,232
Secondary 3,248
Total 32,480

Percentage of total value of principal mineral production:
Crude oil — ranked 1st 50%
Natural gas — ranked 2nd 8%

State Energy Contact

Montana Dept. of Natural Resources and
Conservation, Board of Oil and Gas
1520 East Sixth Avenue
Helena, MT 59620
(406) 444-6675

NEBRASKA



☐ Counties with oil and/or gas production

Background Information

Number of counties 93
With oil and/or gas production 15

First year of production:
Crude oil 1939
Natural gas 1949

Year and amount of peak production:
Crude oil — 24,894 thous. bbls. 1962
Natural gas — 15,743 MMcf 1961

Deepest well drilled: (ft.)
Crude oil 7,438
Natural gas 5,832
Dry hole 9,971

Cumulative number of total wells drilled as of 12/31/86: (excluding service wells)

Oil wells	5,226	31%
Gas wells	214	1%
Dry holes	11,559	68%
Total	16,999	100%

Cumulative crude oil wellhead value as of 12/31/86: (thous. $) $2,678,398

Cumulative production & new reserves as of 12/31/85: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	467	n/a	--	n/a
Production	425	n/a	--	n/a

Value of Oil and Gas

Average 1986 wellhead price:
Crude oil ($/bbl.) $13.70
Natural gas ($/Mcf) $2.82

Wellhead value of 1986 production: (thous. $)
Crude oil $97,243
Natural gas $6,980
Total $104,223

Average 1986 natural gas price to: ($/Mcf)
Residential consumers $4.58
Commercial consumers $3.90
Industrial consumers $3.30
Electric utilities $3.12
All consumers $4.06

Severance taxes paid in 1986 (thous. $) $2,717

1986 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	18	23	41
Gas	1	0	1
Dry	64	31	95
Service	- -	8	8
Total	83	62	145

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	104.5	106.5	211.0
Gas	3.8	0.0	3.8
Dry	343.7	171.5	515.2
Service	- -	27.9	27.9
Total	451.9	305.9	757.9

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 57
New-field wildcat footage (thous. ft.) 304.5

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	22nd	26th
Production	20th	27th
Reserves (1985)	20th	- -

Seismic crew months worked 7
Average rotary rigs active 3

Number of producing wells: (12/31/86)
Crude oil 1,838
Flowing 0
Artificial lift 1,838
Natural gas ..... n/a
Total 1,838

Average production:	thous. bbls.	thous. b/d
Crude oil	7,098	19
NGL	n/a	- -
Total	- -	- -

Natural gas marketed production (MMcf) 2,475
Average output per producing well:
Crude oil (bbls.) 3,862
Natural gas (Mcf) ..... n/a

Average number of employees in:
Oil and gas extraction 741
Refining 134
Transportation 3,014
Wholesale 1,962
Retail 6,548
Total petroleum industry 12,399

1985 Latest Data

Petroleum reserve position as of 12/31/85:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	2	n/a	- -
Production	6	n/a	- -
Net annual change	-4	- -	- -
Proved reserves	42	n/a	- -

Natural gas reserve position as of 12/31/85:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	- -	- -	n/a
Production	- -	- -	- -
Net annual change	- -	- -	- -
Proved reserves	- -	- -	n/a

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	12,522	142,293	29.34
Gas	80	80,203	21.56
Dry	14,843	81,553	16.19
Total	27,445	101,272	20.37

Number of producing strippers 1,716
Number of stripper well abandonments 36

Stripper well crude oil production:
(bbls.) 2,947,347
(b/d) 807
Percentage of oil produced by stripper wells 42%

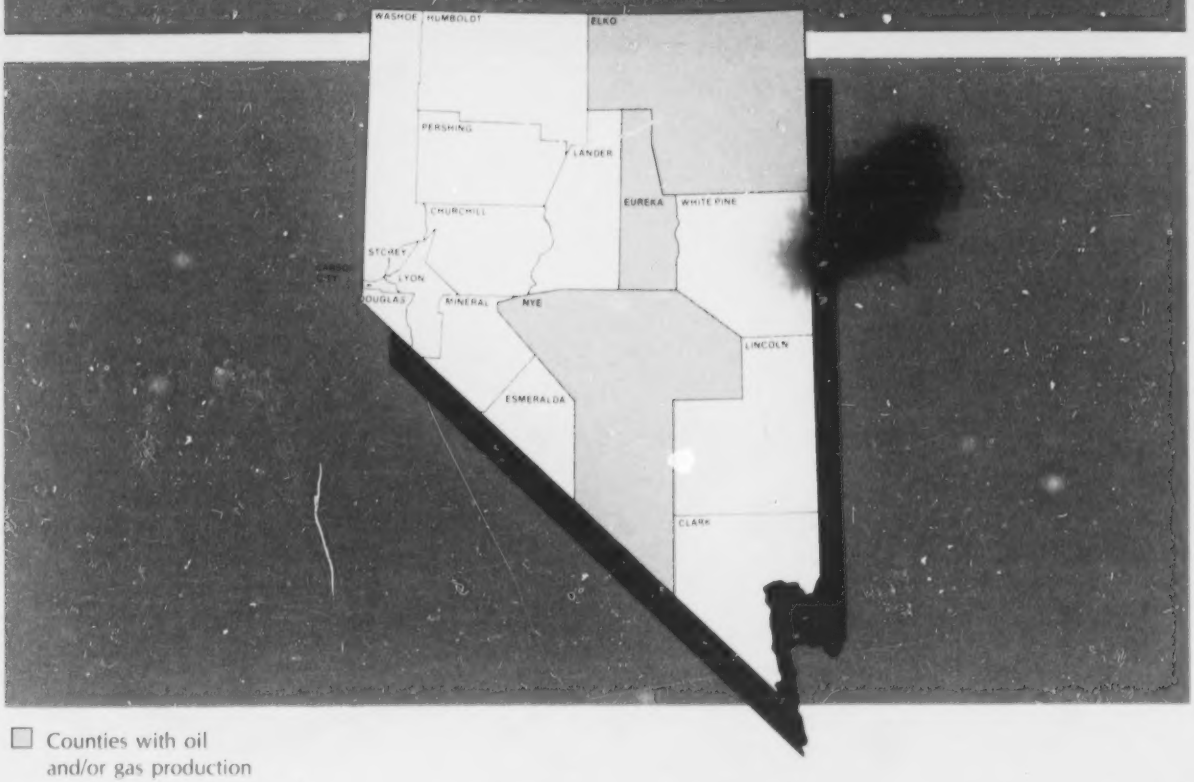
Stripper oil reserves as of 12/31/85: (thous. bbls.)
Primary 23,595
Secondary 11,153
Total 34,748

Percentage of total value of principal mineral production:
Crude oil — ranked 1st 63%
Natural gas — ranked 5th 2%

State Energy Contact

Nebraska Oil & Gas Conservation Commission
P.O. Box 399
Sidney, NB 69162
(308) 254-4595

NEVADA



☐ Counties with oil and/or gas production

Background Information

Number of counties 16
With oil and/or gas production 3

First year of production:
Crude oil 1954
Natural gas ..... Not Applicable

Year and amount of peak production:
Crude oil — 3,039 thous. bbls. 1985
Natural gas ..... Not Applicable

Deepest well drilled: (ft.)
Crude oil 8,694
Natural gas ..... Not Applicable
Dry hole 19,562

Cumulative number of total wells drilled as of 12/31/86: (excluding service wells)

Oil wells	47	13%
Gas wells	1	0%
Dry holes	322	87%
Total	370	100%

Cumulative crude oil wellhead value as of 12/31/86: (thous. $) $304,590

Cumulative production & new reserves as of 12/31/85: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	n/a	0	- -	0
Production	n/a	0	- -	0

Value of Oil and Gas

Average 1986 wellhead price:
Crude oil ($/bbl.) $12.00
Natural gas ($/Mcf) ..... Not Applicable

Wellhead value of 1986 production: (thous. $)
Crude oil $34,884
Natural gas ..... Not Applicable
Total $34,884

Average 1986 natural gas price to: ($/Mcf)
Residential consumers $5.91
Commercial consumers $4.88
Industrial consumers $3.97
Electric utilities $3.14
All consumers $4.82

Severance taxes paid in 1986 (thous. $) $134

1986 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	1	0	1
Gas	0	0	0
Dry	17	0	17
Service	0	0	0
Total	18	0	18

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	7.5	0.0	7.5
Gas	0.0	0.0	0.0
Dry	99.1	0.0	99.1
Service	0.0	0.0	0.0
Total	106.6	0.0	106.6

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 17
New-field wildcat footage (thous. ft.) 102.2

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	29th	- - -
Production	25th	- - -
Reserves (1985)	- - -	- - -

Seismic crew months worked 16
Average rotary rigs active 3

Number of producing wells: (12/31/86)
Crude oil 29
Flowing 6
Artificial lift 23
Natural gas 0
Total 29

Average production:	thous. bbls.	thous. b/d
Crude oil	2,907	8
NGL	0	- - -
Total	2,907	8

Natural gas marketed production (MMcf) 0
Average output per producing well:
Crude oil (bbls.) 100,241
Natural gas (Mcf) ..... Not Applicable

Average number of employees in:
Oil and gas extraction 247
Refining 58
Transportation 688
Wholesale 423
Retail 3,611
Total petroleum industry 5,027

1985 Latest Data

Petroleum reserve position as of 12/31/85:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	n/a	0	- - -
Production	- - -	0	- - -
Net annual change	- - -	- - -	- - -
Proved reserves	n/a	0	- - -

Natural gas reserve position as of 12/31/85:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	- - -	- - -	0
Production	- - -	- - -	0
Net annual change	- - -	- - -	- - -
Proved reserves	- - -	- - -	0

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	- - -	- - -	- - -
Gas	- - -	- - -	- - -
Dry	- - -	- - -	- - -
Total	n/a	- - -	- - -

Number of producing strippers 0
Number of stripper well abandonments 0

Stripper well crude oil production:
(bbls.) 0
(b/d) 0
Percentage of oil produced by stripper wells 0

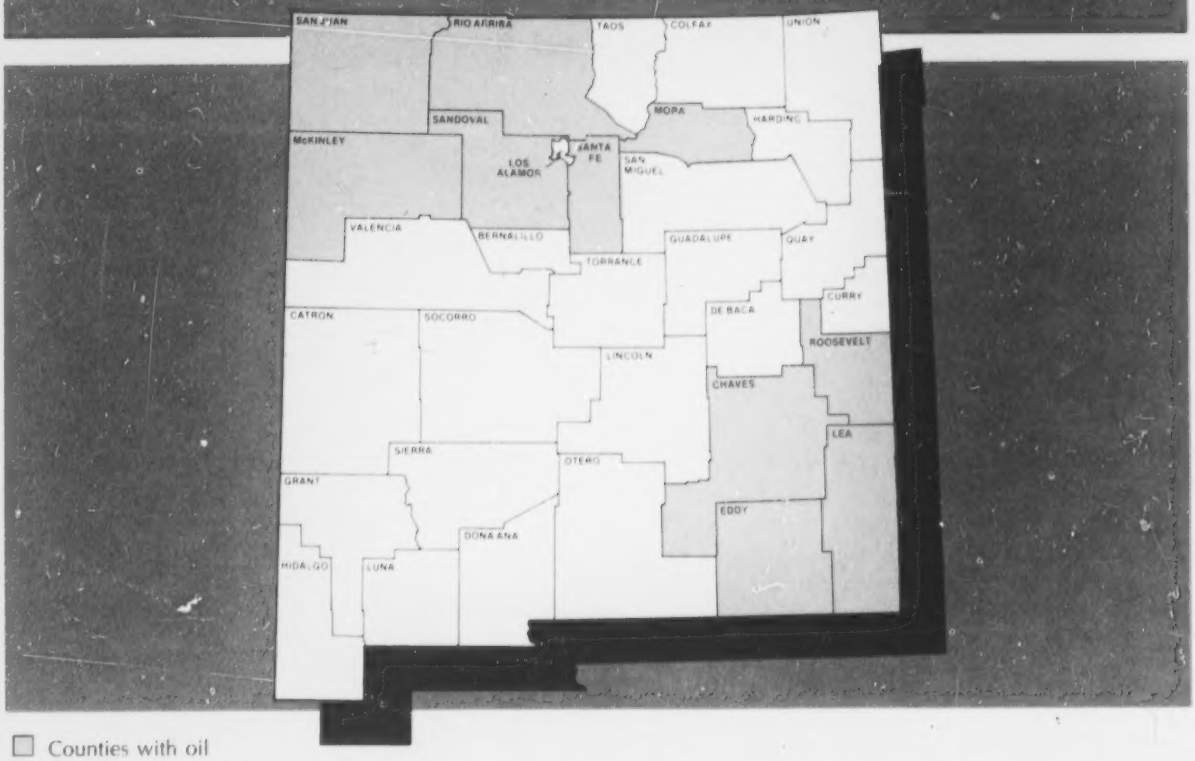
Stripper oil reserves as of 12/31/85: (thous. bbls.)
Primary 0
Secondary 0
Total 0

Percentage of total value of principal mineral production:
Crude oil — ranked 3rd 11%
Natural gas ..... Not Applicable

State Energy Contact

Nevada Department of Minerals
400 West King Street, Suite 106
Carson City, NV 89710
(702) 885-5050

NEW MEXICO



☐ Counties with oil and/or gas production

Background Information

Number of counties 32
With oil and/or gas production 10

First year of production:
Crude oil 1911
Natural gas 1924

Year and amount of peak production:
Crude oil — 129,227 thous. bbls. 1969
Natural gas — 1,244,779 MMcf 1974

Deepest well drilled: (ft.)
Crude oil 17,652
Natural gas 17,544
Dry hole 22,926

Cumulative number of total wells drilled as of 12/31/86: (excluding service wells)

Oil wells	29,819	50%
Gas wells	17,804	29%
Dry holes	12,639	21%
Total	60,262	100%

Cumulative crude oil wellhead value as of 12/31/86: (thous. $) $25,792,317

Cumulative production & new reserves as of 12/31/85: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	5,866	1,637	7,503	48,577
Production	5,178	1,192	6,370	37,139

Value of Oil and Gas

Average 1986 wellhead price:
Crude oil ($/bbl.) $14.93
Natural gas ($/Mcf) $1.91

Wellhead value of 1986 production: (thous. $)
Crude oil $1,130,380
Natural gas $1,355,877
Total $2,486,257

Average 1986 natural gas price to: ($/Mcf)
Residential consumers $5.63
Commercial consumers $3.71
Industrial consumers $3.52
Electric utilities $3.44
All consumers $4.27

Severance taxes paid in 1986 (thous. $) $234,000

1986 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	55	422	477
Gas	25	214	239
Dry	76	118	194
Service	- -	16	16
Total	156	770	926

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	373.6	2,637.5	3,011.1
Gas	150.3	1,295.1	1,445.4
Dry	382.9	718.7	1,101.6
Service	0.0	68.6	68.6
Total	906.8	4,719.9	5,626.6

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 47
New-field wildcat footage (thous. ft.) 208.4

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	8th	9th
Production	7th	4th
Reserves (1985)	7th	5th

Seismic crew months worked 71
Average rotary rigs active 29

Number of producing wells: (12/31/86)
Crude oil 18,409
Flowing 3,403
Artificial lift 15,006
Natural gas 22,362
Total 40,771

Average production:	thous. bbls.	thous. b/d
Crude oil	75,712	207
NGL	32,500	89
Total	108,212	296

Natural gas marketed production (MMcf) 709,883
Average output per producing well:
Crude oil (bbls.) 4,113
Natural gas (Mcf) 31,745

Average number of employees in:
Oil and gas extraction 9,935
Refining 904
Transportation 3,602
Wholesale 2,012
Retail 3,880
Total petroleum industry 20,333

1985 Latest Data

Petroleum reserve position as of 12/31/85:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	104	-24	80
Production	76	42	118
Net annual change	28	-66	-38
Proved reserves	688	445	1,133

Natural gas reserve position as of 12/31/85:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	117	190	307
Production	196	700	896
Net annual change	-79	-510	-589
Proved reserves	1,490	9,948	11,438

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	353,099	422,874	68.05
Gas	264,417	465,523	72.37
Dry	112,758	394,258	65.14
Total	730,274	432,371	69.07

Number of producing strippers 15,199
Number of stripper well abandonments 721

Stripper well crude oil production:
(bbls.) 15,366,539
(b/d) 42,100
Percentage of oil produced by stripper wells 21%

Stripper oil reserves as of 12/31/85: (thous. bbls.)
Primary 76,034
Secondary 33,500
Total 109,534

Percentage of total value of principal mineral production:
Crude oil — ranked 2nd 37%
Natural gas — ranked 1st 42%

State Energy Contact

New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87504
(505) 827-5800

NEW YORK

☐ Counties with oil and/or gas production

Background Information

Number of counties 62
With oil and/or gas production 23

First year of production:
Crude oil 1865
Natural gas 1885

Year and amount of peak production:
Crude oil — 6,685 thous. bbls. 1882
Natural gas — 39,402 MMcf 1938

Deepest well drilled: (ft.)
Crude oil 4,634
Natural gas 5,425
Dry hole 13,500

Cumulative number of total wells drilled as of 12/31/86: (excluding service wells)

Oil wells	9,244	64%
Gas wells	4,262	29%
Dry holes	1,052	7%
Total	14,558	100%

Cumulative crude oil wellhead value as of 12/31/86: (thous. $) $1,006,540

Cumulative production & new reserves as of 12/31/85: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	n/a	n/a	- - -	1,023
Production	n/a	n/a	- - -	654

Value of Oil and Gas

Average 1986 wellhead price:
Crude oil ($/bbl.) $16.03
Natural gas ($/Mcf) $2.60

Wellhead value of 1986 production: (thous. $)
Crude oil $13,674
Natural gas $91,000
Total $104,674

Average 1986 natural gas price to: ($/Mcf)
Residential consumers $7.45
Commercial consumers $5.99
Industrial consumers $4.92
Electric utilities $2.31
All consumers $5.89

Severance taxes paid in 1986 ..... Not Applicable

1986 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	0	12	12
Gas	2	164	166
Dry	5	6	11
Service	0	0	0
Total	7	182	189

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	0.0	16.8	16.8
Gas	3.8	369.8	373.7
Dry	22.1	14.0	36.1
Service	0.0	0.0	0.0
Total	25.9	400.6	426.5

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 4
New-field wildcat footage (thous. ft.) 18.4

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	25th	11th
Production	27th	21st
Reserves (1985)	- - -	21st

Seismic crew months worked 7
Average rotary rigs active 2

Number of producing wells: (12/31/86)
Crude oil 4,632
Flowing 10
Artificial lift 4,622
Natural gas 4,927
Total 9,559

Average production:	thous. bbls.	thous. b/d
Crude oil	853	2
NGL	n/a	- - -
Total	- - -	- - -

Natural gas marketed production (MMcf) 35,000
Average output per producing well:
Crude oil (bbls.) 184
Natural gas (Mcf) 7,104

Average number of employees in:
Oil and gas extraction 2,152
Refining 7,197
Transportation 6,535
Wholesale 9,081
Retail 28,280
Total petroleum industry 53,245

1985 Latest Data

Petroleum reserve position as of 12/31/85:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	- - -	- - -	n/a
Production	- - -	- - -	- - -
Net annual change	- - -	- - -	- - -
Proved reserves	- - -	- - -	n/a

Natural gas reserve position as of 12/31/85:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	0	-2	-2
Production	0	18	18
Net annual change	0	-20	-20
Proved reserves	2	367	369

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	- - -	- - -	- - -
Gas	- - -	- - -	- - -
Dry	- - -	- - -	- - -
Total	n/a	- - -	- - -

Number of producing strippers 4,448
Number of stripper well abandonments 226

Stripper well crude oil production:
(bbls.) 600,614
(b/d) 1,646
Percentage of oil produced by stripper wells 56%

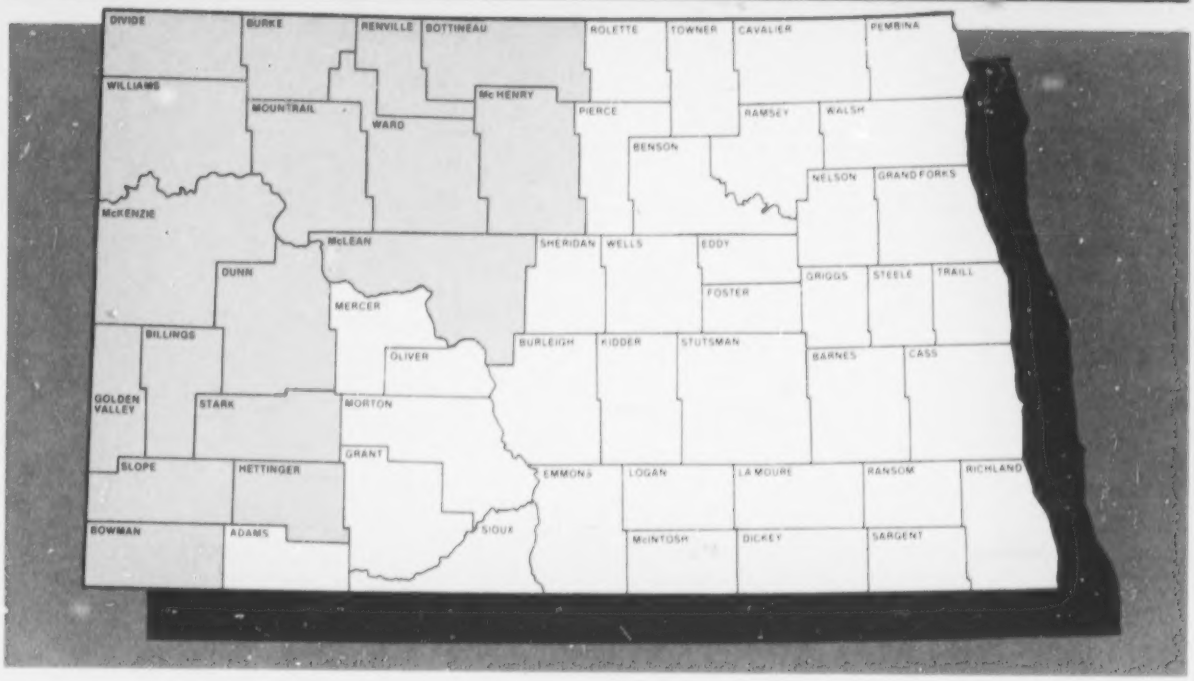
Stripper oil reserves as of 12/31/85: (thous. bbls.)
Primary 1,202
Secondary 7,601
Total 8,803

Percentage of total value of principal mineral production:
Crude oil — ranked 6th 3%
Natural gas — ranked 4th 13%

State Energy Contact

New York Energy Office
Department of Oil and Gas, 2 Rockefeller Plaza
Albany, NY 12223
(518) 473-4375

NORTH DAKOTA



☐ Counties with oil and/or gas production

Background Information

Number of counties 53
With oil and/or gas production 17

First year of production:
Crude oil 1951
Natural gas 1907

Year and amount of peak production:
Crude oil — 52,652 thous. bbls. 1984
Natural gas — 72,633 MMcf 1985

Deepest well drilled: (ft.)
Crude oil 15,380
Natural gas 14,636
Dry hole 15,897

Cumulative number of total wells drilled as of 12/31/86: (excluding service wells)

Oil wells	5,413	51%
Gas wells	102	1%
Dry holes	5,199	48%
Total	10,714	100%

Cumulative crude oil wellhead value as of 12/31/86: (thous. $) $12,114,540

Cumulative production & new reserves as of 12/31/85: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	1,083	165	1,248	1,860
Production	828	91	919	1,210

Value of Oil and Gas

Average 1986 wellhead price:
Crude oil ($/bbl.) $13.54
Natural gas ($/Mcf) $1.35

Wellhead value of 1986 production: (thous. $)
Crude oil $617,803
Natural gas $80,467
Total $698,270

Average 1986 natural gas price to: ($/Mcf)
Residential consumers $5.29
Commercial consumers $4.79
Industrial consumers $4.08
Electric utilities ..... n/a
All consumers $4.93

Severance taxes paid in 1986 (thous. $) $81,775

1986 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	43	62	105
Gas	1	1	2
Dry	82	29	111
Service	- -	0	0
Total	126	92	218

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	429.1	606.2	1,035.3
Gas	14.5	14.4	28.9
Dry	707.2	240.7	948.0
Service	- -	0.0	0.0
Total	1,150.8	861.3	2,012.1

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 71
New-field wildcat footage (thous. ft.) 627.8

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	16th	25th
Production	9th	19th
Reserves (1985)	10th	20th

Seismic crew months worked 42
Average rotary rigs active 13

Number of producing wells: (12/31/86)
Crude oil 3,543
Flowing 641
Artificial lift 2,902
Natural gas 103
Total 3,646

Average production:	thous. bbls.	thous. b/d
Crude oil	45,628	125
NGL	5,040	14
Total	50,668	139

Natural gas marketed production (MMcf) 59,605
Average output per producing well:
Crude oil (bbls.) 12,878
Natural gas (Mcf) 578,689

Average number of employees in:
Oil and gas extraction 3,126
Refining 384
Transportation 1,226
Wholesale 2,327
Retail 2,307
Total petroleum industry 9,370

1985 Latest Data

Petroleum reserve position as of 12/31/85:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	43	8	51
Production	48	7	55
Net annual change	-5	1	-4
Proved reserves	255	74	329

Natural gas reserve position as of 12/31/85:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	121	-47	74
Production	57	10	67
Net annual change	64	-57	7
Proved reserves	331	319	650

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	186,578	740,391	79.63
Gas	9,302	1,550,324	112.20
Dry	103,537	409,237	47.74
Total	299,417	585,944	65.16

Number of producing strippers 1,091
Number of stripper well abandonments 78

Stripper well crude oil production:
(bbls.) 1,905,181
(b/d) 5,220
Percentage of oil produced by stripper wells 4%

Stripper oil reserves as of 12/31/85: (thous. bbls.)
Primary 34,900
Secondary 27,420
Total 62,320

Percentage of total value of principal mineral production:
Crude oil — ranked 1st 76%
Natural gas — ranked 2nd 8%

State Energy Contact

North Dakota Industrial Commission
Oil and Gas Division, 900 East Boulevard
Bismarck, ND 58505
(701) 224-2969

OHIO

☐ Counties with oil and/or gas production

Background Information

Number of counties 88
With oil and/or gas production 68

First year of production:
Crude oil 1860
Natural gas 1884

Year and amount of peak production:
Crude oil — 23,941 thous. bbls. 1896
Natural gas — 186,480 MMcf 1984

Deepest well drilled: (ft.)
Crude oil 7,805
Natural gas 8,488
Dry hole 11,442

Cumulative number of total wells drilled as of 12/31/86: (excluding service wells)

Oil wells	73,797	46%
Gas wells	49,453	31%
Dry holes	36,564	23%
Total	159,814	100%

Cumulative crude oil wellhead value as of 12/31/86: (thous. $) $5,199,718

Cumulative production & new reserves as of 12/31/85: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	1,011	8	1,019	7,745
Production	932	8	940	6,412

Value of Oil and Gas

Average 1986 wellhead price:
Crude oil ($/bbl.) $15.51
Natural gas ($/Mcf) $2.84

Wellhead value of 1986 production: (thous. $)
Crude oil $208,485
Natural gas $525,400
Total $733,885

Average 1986 natural gas price to: ($/Mcf)
Residential consumers $5.81
Commercial consumers $5.38
Industrial consumers $4.70
Electric utilities $4.74
All consumers $5.53

Severance taxes paid in 1986 (thous. $) $6,045

1986 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	0	1,136	1,136
Gas	0	419	419
Dry	26	77	103
Service	0	8	8
Total	26	1,640	1,666

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	0.0	4,455.1	4,455.1
Gas	0.0	1,631.0	1,631.0
Dry	81.4	203.7	285.1
Service	0.0	13.4	13.4
Total	81.4	6,303.1	6,384.5

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 19
New-field wildcat footage (thous. ft.) 57.3

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	5th	6th
Production	18th	9th
Reserves (1985)	17th	15th

Seismic crew months worked 2
Average rotary rigs active 18

Number of producing wells: (12/31/86)
Crude oil 29,937
Flowing 386
Artificial lift 29,551
Natural gas 32,745
Total 62,682

Average production:	thous. bbls.	thous. b/d
Crude oil	13,442	37
NGL	n/a	- - -
Total	- - -	- - -

Natural gas marketed production (MMcf) 185,000
Average output per producing well:
Crude oil (bbls.) 449
Natural gas (Mcf) 5,650

Average number of employees in:
Oil and gas extraction 7,872
Refining 6,066
Transportation 8,074
Wholesale 6,074
Retail 29,865
Total petroleum industry 57,951

1985 Latest Data

Petroleum reserve position as of 12/31/85:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	-26	n/a	- - -
Production	11	- - -	- - -
Net annual change	-37	- - -	- - -
Proved reserves	79	n/a	- - -

Natural gas reserve position as of 12/31/85:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	-151	82	-69
Production	89	51	140
Net annual change	-240	31	-209
Proved reserves	938	395	1,333

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	- - -	- - -	- - -
Gas	- - -	- - -	- - -
Dry	- - -	- - -	- - -
Total	n/a	- - -	- - -

Number of producing strippers 26,412
Number of stripper well abandonments 612

Stripper well crude oil production:
(bbls.) 10,491,315
(b/d) 28,743
Percentage of oil produced by stripper wells 70%

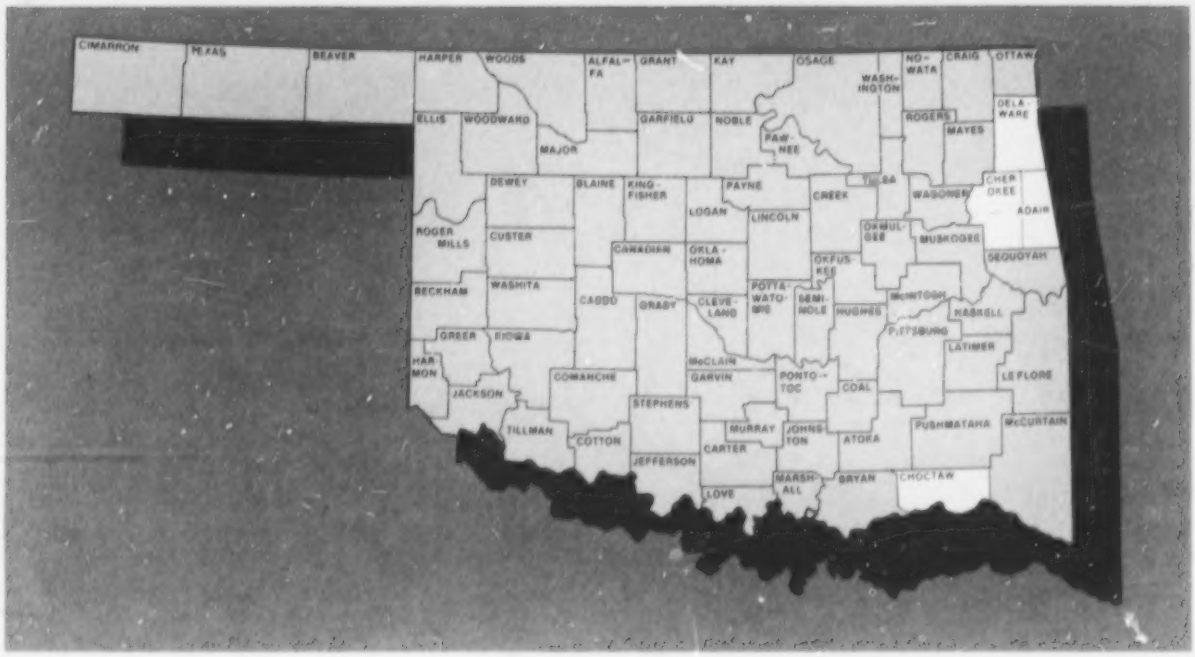
Stripper oil reserves as of 12/31/85: (thous. bbls.)
Primary 85,452
Secondary 282
Total 85,734

Percentage of total value of principal mineral production:
Crude oil — ranked 2nd 14%
Natural gas — ranked 1st 20%

State Energy Contact

Ohio Department of Natural Resources
Division of Oil and Gas, Fountain Square Bldg. A
Columbus, OH 43224
(614) 265-6917

OKLAHOMA



☐ Counties with oil and/or gas production

Background Information

Number of counties 77
With oil and/or gas production 73

First year of production:
Crude oil 1891
Natural gas 1902

Year and amount of peak production:
Crude oil — 277,775 thous. bbls. 1927
Natural gas — 2,019,199 MMcf 1981

Deepest well drilled: (ft.)
Crude oil 22,850
Natural gas 24,969
Dry hole 31,441

Cumulative number of total wells drilled as of 12/31/86: (excluding service wells)

Oil wells	230,052	60%
Gas wells	44,775	11%
Dry holes	110,875	29%
Total	385,702	100%

Cumulative crude oil wellhead value as of 12/31/86: (thous. $) $65,602,676

Cumulative production & new reserves as of 12/31/85: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	13,612	3,609	17,221	78,330
Production	12,677	2,783	15,460	61,252

Value of Oil and Gas

Average 1986 wellhead price:
Crude oil ($/bbl.) $14.47
Natural gas ($/Mcf) $1.69

Wellhead value of 1986 production: (thous. $)
Crude oil $2,157,549
Natural gas $3,240,558
Total $5,398,107

Average 1986 natural gas price to: ($/Mcf)
Residential consumers $5.11
Commercial consumers $4.38
Industrial consumers $2.74
Electric utilities $2.75
All consumers $3.42

Severance taxes paid in 1986 (thous. $) $571,965

1986 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	26	1,973	1,999
Gas	12	1,000	1,012
Dry	171	1,062	1,233
Service	--	29	29
Total	209	4,064	4,273

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	146.7	9,324.7	9,471.4
Gas	87.7	6,395.4	6,483.2
Dry	862.3	5,513.3	6,375.6
Service	--	73.9	73.9
Total	1,096.7	21,307.4	22,404.1

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 126
New-field wildcat footage (thous. ft.) 646.9

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	2nd	2nd
Production	5th	3rd
Reserves (1985)	6th	4th

Seismic crew months worked 130
Average rotary rigs active 142

Number of producing wells: (12/31/86)
Crude oil 100,261
Flowing 5,013
Artificial lift 95,248
Natural gas 25,734
Total 125,995

Average production:	thous. bbls.	thous. b/d
Crude oil	149,105	409
NGL	66,000	181
Total	215,105	590

Natural gas marketed production (MMcf) 1,917,490
Average output per producing well:
Crude oil (bbls.) 1,487
Natural gas (Mcf) 74,512

Average number of employees in:
Oil and gas extraction 49,626
Refining 7,182
Transportation 6,909
Wholesale 4,762
Retail 5,963
Total petroleum industry 74,442

1985 Latest Data

Petroleum reserve position as of 12/31/85:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	135	145	280
Production	140	88	228
Net annual change	-5	57	52
Proved reserves	935	826	1,761

Natural gas reserve position as of 12/31/85:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	269	1,503	1,772
Production	364	1,432	1,796
Net annual change	-95	71	-24
Proved reserves	2,149	14,929	17,078

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	987,463	268,624	60.09
Gas	1,003,762	698,027	102.31
Dry	538,104	252,631	49.10
Total	2,529,330	349,162	67.99

Number of producing strippers 83,034
Number of stripper well abandonments 1,156

Stripper well crude oil production:
(bbls.) 91,841,782
(b/d) 251,621
Percentage of oil produced by stripper wells 61%

Stripper oil reserves as of 12/31/85: (thous. bbls.)
Primary 239,460
Secondary 282,460
Total 521,920

Percentage of total value of principal mineral production:
Crude oil — ranked 2nd 45%
Natural gas — ranked 1st 51%

State Energy Contact

Oklahoma Corporation Commission
Oil and Gas Division, Jim Thorpe Building
Oklahoma City, OK 73105
(405) 521-2301

OREGON

☐ Counties with oil and/or gas production

Background Information

Number of counties 36
With oil and/or gas production 1

First year of production:
Crude oil ..... Not Applicable
Natural gas 1979

Year and amount of peak production:
Crude oil ..... Not Applicable
Natural gas — 5,000 MMcf 1980/1981

Deepest well drilled: (ft.)
Crude oil ..... Not Applicable
Natural gas 3,027
Dry hole 13,177

Cumulative number of total wells drilled as of 12/31/86: (excluding service wells)

Oil wells	0	0%
Gas wells	21	6%
Dry holes	308	94%
Total	329	100%

Cumulative crude oil wellhead value as of 12/31/86: (thous. $) ..... Not Applicable

Cumulative production & new reserves as of 12/31/85: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	0	n/a	- - -	40
Production	0	n/a	- - -	19

Value of Oil and Gas

Average 1986 wellhead price:
Crude oil ($/bbl.) ..... Not Applicable
Natural gas ($/Mcf) $2.04

Wellhead value of 1986 production: (thous. $)
Crude oil ..... Not Applicable
Natural gas $8,160
Total $8,160

Average 1986 natural gas price to: ($/Mcf)
Residential consumers $6.63
Commercial consumers $5.63
Industrial consumers $3.42
Electric utilities ..... n/a
All consumers $4.79

Severance taxes paid in 1986 (thous. $) $253

1986 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	0	0	0
Gas	0	2	2
Dry	8	0	8
Service	0	0	0
Total	8	2	10

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	0.0	0.0	0.0
Gas	0.0	3.7	3.7
Dry	22.9	0.0	22.9
Service	0.0	0.0	0.0
Total	22.9	3.7	26.6

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 1
New-field wildcat footage (thous. ft.) 2.8

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	- - -	25th
Production	- - -	25th
Reserves (1985)	- - -	- - -

Seismic crew months worked 8
Average rotary rigs active 0

Number of producing wells: (12/31/86)
Crude oil 0
Flowing 0
Artificial lift 0
Natural gas ..... n/a
Total 0

Average production:	thous. bbls.	thous. b/d
Crude oil	0	0
NGL	0	0
Total	0	0

Natural gas marketed production (MMcf) 4,000
Average output per producing well:
Crude oil (bbls.) ..... Not Applicable
Natural gas (Mcf) 0

Average number of employees in:
Oil and gas extraction 104
Refining 52
Transportation 0
Wholesale 2,529
Retail 8,334
Total petroleum industry 11,019

1985 Latest Data

Petroleum reserve position as of 12/31/85:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	0	0	- - -
Production	0	0	- - -
Net annual change	- - -	- - -	- - -
Proved reserves	0	0	- - -

Natural gas reserve position as of 12/31/85:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	- - -	- - -	n/a
Production	- - -	- - -	- - -
Net annual change	- - -	- - -	- - -
Proved reserves	- - -	- - -	n/a

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	- - -	- - -	- - -
Gas	- - -	- - -	- - -
Dry	- - -	- - -	- - -
Total	n/a	- - -	- - -

Number of producing strippers 0
Number of stripper well abandonments 0

Stripper well crude oil production:
(bbls.) 0
(b/d) 0
Percentage of oil produced by stripper wells 0

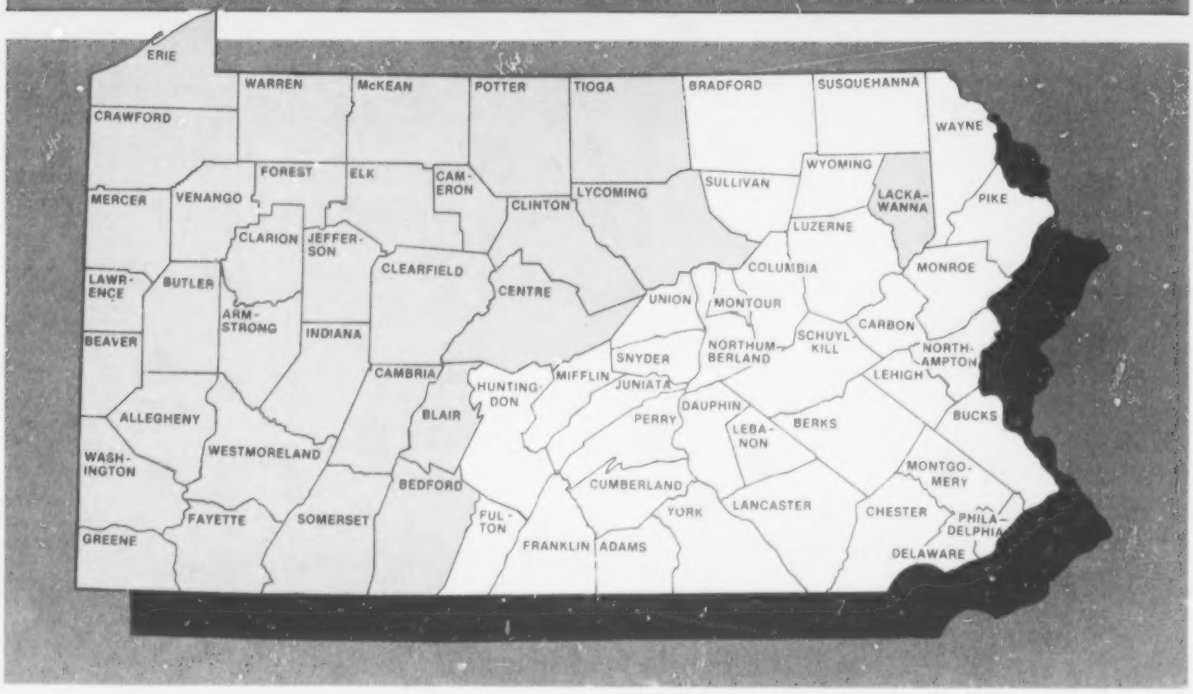
Stripper oil reserves as of 12/31/85: (thous. bbls.)
Primary 0
Secondary 0
Total 0

Percentage of total value of principal mineral production:
Crude oil ..... Not Applicable
Natural gas — ranked 4th 7%

State Energy Contact

Oregon Dept. of Geology & Mineral Industries
910 State Office Building
Portland, OR 97201
(503) 229-5580

PENNSYLVANIA



☐ Counties with oil and/or gas production

Background Information

Number of counties 67
With oil and/or gas production 32

First year of production:
Crude oil 1859
Natural gas 1881

Year and amount of peak production:
Crude oil — 31,424 thous. bbls. 1891
Natural gas — 166,342 MMcf 1984

Deepest well drilled: (ft.)
Crude oil 8,484
Natural gas 19,365
Dry hole 21,460

Cumulative number of total wells drilled as of 12/31/86: (excluding service wells)

Oil wells	248,771	79%
Gas wells	29,338	9%
Dry holes	38,408	12%
Total	316,517	100%

Cumulative crude oil wellhead value as of 12/31/86: (thous. $) $3,982,986

Cumulative production & new reserves as of 12/31/85: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	1,352	15	1,367	11,580
Production	1,314	15	1,329	9,962

Value of Oil and Gas

Average 1986 wellhead price:
Crude oil ($/bbl.) $15.77
Natural gas ($/Mcf) $2.50

Wellhead value of 1986 production: (thous. $)
Crude oil $59,658
Natural gas $364,700
Total $424,358

Average 1986 natural gas price to: ($/Mcf)
Residential consumers $6.38
Commercial consumers $5.82
Industrial consumers $4.01
Electric utilities $4.24
All consumers $5.59

Severance taxes paid in 1986 ..... Not Applicable

1986 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	1	75	76
Gas	9	628	637
Dry	7	14	21
Service	- -	0	0
Total	17	717	734

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	2.8	108.5	111.3
Gas	49.2	2,579.4	2,628.6
Dry	42.2	55.4	97.5
Service	- -	0.0	0.0
Total	94.2	2,743.3	2,837.5

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 6
New-field wildcat footage (thous. ft.) 28.9

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	20th	3rd
Production	23rd	11th
Reserves (1985)	22nd	13th

Seismic crew months worked 13
Average rotary rigs active 17

Number of producing wells: (12/31/86)
Crude oil 20,000
Flowing 0
Artificial lift 20,000
Natural gas 26,500
Total 46,500

Average production:	thous. bbls.	thous. b/d
Crude oil	3,783	10
NGL	n/a	- - -
Total	- - -	- - -

Natural gas marketed production (MMcf) 145,680
Average output per producing well:
Crude oil (bbls.) 189
Natural gas (Mcf) 5,505

Average number of employees in:
Oil and gas extraction 4,500
Refining 9,100
Transportation 9,300
Wholesale 9,300
Retail 26,300
Total petroleum industry 58,500

1985 Latest Data

Petroleum reserve position as of 12/31/85:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	2	n/a	- - -
Production	4	- - -	- - -
Net annual change	-2	- - -	- - -
Proved reserves	38	n/a	- - -

Natural gas reserve position as of 12/31/85:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	-4	169	165
Production	7	116	123
Net annual change	-11	53	42
Proved reserves	67	1,551	1,618

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	- - -	- - -	- - -
Gas	- - -	- - -	- - -
Dry	- - -	- - -	- - -
Total	n/a	- - -	- - -

Number of producing strippers 11,877
Number of stripper well abandonments 930

Stripper well crude oil production:
(bbls.) 4,257,448
(b/d) 11,664
Percentage of oil produced by stripper wells 88%

Stripper oil reserves as of 12/31/85: (thous. bbls.)
Primary 18,892
Secondary 34,115
Total 53,007

Percentage of total value of principal mineral production:
Crude oil — ranked 4th 3%
Natural gas — ranked 1st 13%

State Energy Contact

Pennsylvania Dept. of Environmental Resources
Oil and Gas Division, P.O. Box 2063
Harrisburg, PA 17120
(717) 787-2814

SOUTH DAKOTA

☐ Counties with oil and/or gas production

Background Information

Number of counties 67
With oil and/or gas production 4

First year of production:
Crude oil 1953
Natural gas 1899

Year and amount of peak production:
Crude oil — 1,596 thous. bbls. 1985
Natural gas — 2,558 MMcf 1985

Deepest well drilled: (ft.)
Crude oil 9,150
Natural gas 3,550
Dry hole 9,771

Cumulative number of total wells drilled as of 12/31/86: (excluding service wells)

Oil wells	209	19%
Gas wells	72	6%
Dry holes	840	75%
Total	1,121	100%

Cumulative crude oil wellhead value as of 12/31/86: (thous. $) $306,094

Cumulative production & new reserves as of 12/31/85: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	n/a	n/a	- - -	n/a
Production	n/a	n/a	- - -	n/a

Value of Oil and Gas

Average 1986 wellhead price:
Crude oil ($/bbl.) $13.81
Natural gas ($/Mcf) $2.46

Wellhead value of 1986 production: (thous. $)
Crude oil $21,903
Natural gas $6,212
Total $28,115

Average 1986 natural gas price to: ($/Mcf)
Residential consumers $5.27
Commercial consumers $4.36
Industrial consumers $3.62
Electric utilities ..... n/a
All consumers $4.68

Severance taxes paid in 1986 (thous. $) $1,821

1986 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	2	0	2
Gas	0	0	0
Dry	15	0	15
Service	0	0	0
Total	17	0	17

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	12.5	0.0	12.5
Gas	0.0	0.0	0.0
Dry	57.7	0.0	57.7
Service	0.0	0.0	0.0
Total	70.1	0.0	70.1

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 16
New-field wildcat footage (thous. ft.) 61.6

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	28th	- - -
Production	26th	26th
Reserves (1985)	- - -	- - -

Seismic crew months worked 7
Average rotary rigs active 1

Number of producing wells: (12/31/86)
Crude oil 148
Flowing 0
Artificial lift 148
Natural gas 44
Total 192

Average production:	thous. bbls.	thous. b/d
Crude oil	1,586	4
NGL	0	- - -
Total	1,586	4

Natural gas marketed production (MMcf) 2,525
Average output per producing well:
Crude oil (bbls.) 10,716
Natural gas (Mcf) 57,386

Average number of employees in:
Oil and gas extraction 126
Refining 0
Transportation 184
Wholesale 1,533
Retail 2,669
Total petroleum industry 4,512

1985 Latest Data

Petroleum reserve position as of 12/31/85:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	n/a	0	- - -
Production	- - -	0	- - -
Net annual change	- - -	- - -	- - -
Proved reserves	n/a	0	- - -

Natural gas reserve position as of 12/31/85:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	- - -	- - -	n/a
Production	- - -	- - -	- - -
Net annual change	- - -	- - -	- - -
Proved reserves	- - -	- - -	n/a

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	- - -	- - -	- - -
Gas	- - -	- - -	- - -
Dry	- - -	- - -	- - -
Total	n/a	- - -	- - -

Number of producing strippers 24
Number of stripper well abandonments 0

Stripper well crude oil production:
(bbls.) 65,340
(b/d) 179
Percentage of oil produced by stripper wells 4%

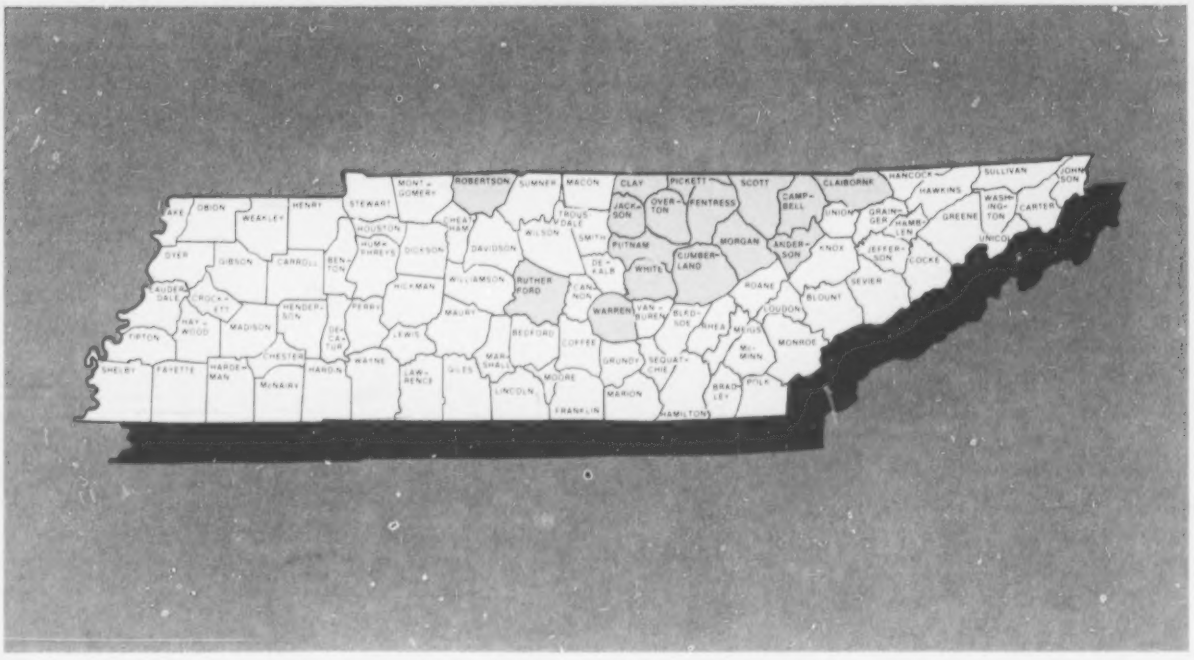
Stripper oil reserves as of 12/31/85: (thous. bbls.)
Primary 169
Secondary 216
Total 385

Percentage of total value of principal mineral production:
Crude oil — ranked 3rd 16%
Natural gas — ranked 6th 3%

State Energy Contact

South Dakota Geological Survey
University of South Dakota Science Center
Vermillon, SD 57069
(605) 677-5227

TENNESSEE



☐ Counties with oil and/or gas production

Background Information

Number of counties 95
With oil and/or gas production 16

First year of production:
Crude oil 1860
Natural gas 1889

Year and amount of peak production:
Crude oil — 1,132 thous. bbls. 1982
Natural gas — 5,022 MMcf 1984

Deepest well drilled: (ft.)
Crude oil 10,141
Natural gas 4,624
Dry hole 11,540

Cumulative number of total wells drilled as of 12/31/86: (excluding service wells)

Oil wells	1,556	27%
Gas wells	1,458	26%
Dry holes	2,668	47%
Total	5,682	100%

Cumulative crude oil wellhead value as of 12/31/86: (thous. $) $253,374

Cumulative production & new reserves as of 12/31/85: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	n/a	n/a	- - -	n/a
Production	n/a	n/a	- - -	n/a

Value of Oil and Gas

Average 1986 wellhead price:
Crude oil ($/bbl.) $15.00
Natural gas ($/Mcf) $1.78

Wellhead value of 1986 production: (thous. $)
Crude oil $9,660
Natural gas $8,900
Total $18,560

Average 1986 natural gas price to: ($/Mcf)
Residential consumers $5.06
Commercial consumers $4.74
Industrial consumers $3.79
Electric utilities ..... n/a
All consumers $4.17

Severance taxes paid in 1986 (thous. $) $476

1986 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	7	26	33
Gas	14	48	62
Dry	31	20	51
Service	0	0	0
Total	52	94	146

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	11.7	43.1	54.8
Gas	16.5	68.2	84.7
Dry	60.5	36.3	96.8
Service	0.0	0.0	0.0
Total	88.8	147.5	236.3

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 32
New-field wildcat footage (thous. ft.) 58.8

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	23rd	17th
Production	28th	24th
Reserves (1985)	- - -	- - -

Seismic crew months worked 0
Average rotary rigs active 1

Number of producing wells: (12/31/86)
Crude oil 806
Flowing 0
Artificial lift 806
Natural gas 788
Total 1,594

Average production:	thous. bbls.	thous. b/d
Crude oil	644	3
NGL	n/a	- - -
Total	- - -	- - -

Natural gas marketed production (MMcf) 5,000
Average output per producing well:
Crude oil (bbls.) 799
Natural gas (Mcf) 6,345

Average number of employees in:
Oil and gas extraction 361
Refining 447
Transportation 1,825
Wholesale 5,367
Retail 11,482
Total petroleum industry 19,482

1985 Latest Data

Petroleum reserve position as of 12/31/85:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	n/a	n/a	- - -
Production	- - -	n/a	- - -
Net annual change	- - -	- - -	- - -
Proved reserves	n/a	n/a	- - -

Natural gas reserve position as of 12/31/85:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	- - -	- --	n/a
Production	- - -	- - -	- - -
Net annual change	- - -	- - -	- - -
Proved reserves	- - -	- - -	n/a

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	- - -	- - -	- - -
Gas	- - -	- - -	- - -
Dry	- - -	- - -	- - -
Total	n/a	- - -	- - -

Number of producing strippers 952
Number of stripper well abandonments ..... n/a

Stripper well crude oil production:
(bbls.) 450,787
(b/d) 1,235
Percentage of oil produced by stripper wells 57%

Stripper oil reserves as of 12/31/85: (thous. bbls.)
Primary 555
Secondary 119
Total 674

Percentage of total value of principal mineral production:
Crude oil — ranked 7th 3%
Natural gas — ranked 8th 2%

State Energy Contact

Tennessee Department of Conservation
Oil and Gas Division, 701 Broadway Street
Nashville, TN 37203
(615) 742-6694

TEXAS

☐ Counties with oil and/or gas production

Background Information

Number of counties 254
With oil and/or gas production 215

First year of production:
Crude oil 1889
Natural gas 1889

Year and amount of peak production:
Crude oil — 1,301,685 thous. bbls. 1972
Natural gas — 8,657,840 MMcf 1972

Deepest well drilled: (ft.)
Crude oil 28,500
Natural gas 26,536
Dry hole 29,670

Cumulative number of total wells drilled as of 12/31/86: (excluding service wells)

Oil wells	491,892	59%
Gas wells	74,392	9%
Dry holes	274,125	32%
Total	840,409	100%

Cumulative crude oil wellhead value as of 12/31/86: (thous. $) $336,462,147

Cumulative production & new reserves as of 12/31/85: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	65,299	14,046	79,345	314,446
Production	57,405	11,066	68,471	261,712

Value of Oil and Gas

Average 1986 wellhead price:
Crude oil ($/bbl.) $14.74
Natural gas ($/Mcf) $1.60

Wellhead value of 1986 production: (thous. $)
Crude oil $12,375,792
Natural gas $9,747,368
Total $22,123,160

Average 1986 natural gas price to: ($/Mcf)
Residential consumers $5.46
Commercial consumers $4.30
Industrial consumers $2.11
Electric utilities $2.34
All consumers $2.57

Severance taxes paid in 1986 (thous. $) $1,547,926

1986 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	304	6,409	6,713
Gas	370	1,185	1,555
Dry	1,821	2,461	4,282
Service	- -	453	453
Total	2,495	10,508	13,003

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	2,037.9	27,363.1	29,401.0
Gas	2,861.8	8,545.5	11,407.3
Dry	10,666.4	9,995.5	20,661.9
Service	- -	1,627.9	1,627.9
Total	15,566.0	47,532.0	63,098.1

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 834
New-field wildcat footage (thous. ft.) 5,960.7

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	1st	1st
Production	1st	1st
Reserves (1985)	1st	1st

Seismic crew months worked 481
Average rotary rigs active 312

Number of producing wells: (12/31/86)
Crude oil 201,272
Flowing 14,147
Artificial lift 187,125
Natural gas 46,442
Total 247,714

Average production:	thous. bbls.	thous. b/d
Crude oil	839,606	2,300
NGL	243,000	666
Total	1,082,606	2,966

Natural gas marketed production (MMcf) 6,092,105
Average output per producing well:
Crude oil (bbls.) 4,171
Natural gas (Mcf) 131,177

Average number of employees in:
Oil and gas extraction 194,503
Refining 32,026
Transportation 31,854
Wholesale 24,557
Retail 34,728
Total petroleum industry 317,668

1985 Latest Data

Petroleum reserve position as of 12/31/85:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	1,174	258	1,432
Production	837	325	1,162
Net annual change	337	-67	270
Proved reserves	7,894	2,981	10,875

Natural gas reserve position as of 12/31/85:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	946	4,002	4,948
Production	1,217	4,647	5,864
Net annual change	-271	-645	-916
Proved reserves	10,520	42,214	52,734

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	3,301,202	246,579	53.90
Gas	2,612,960	875,657	115.60
Dry	2,017,705	299,274	59.41
Total	7,931,867	343,163	67.33

Number of producing strippers 130,311
Number of stripper well abandonments 6,015

Stripper well crude oil production:
(bbls.) 158,738,471
(b/d) 434,900
Percentage of oil produced by stripper wells 19%

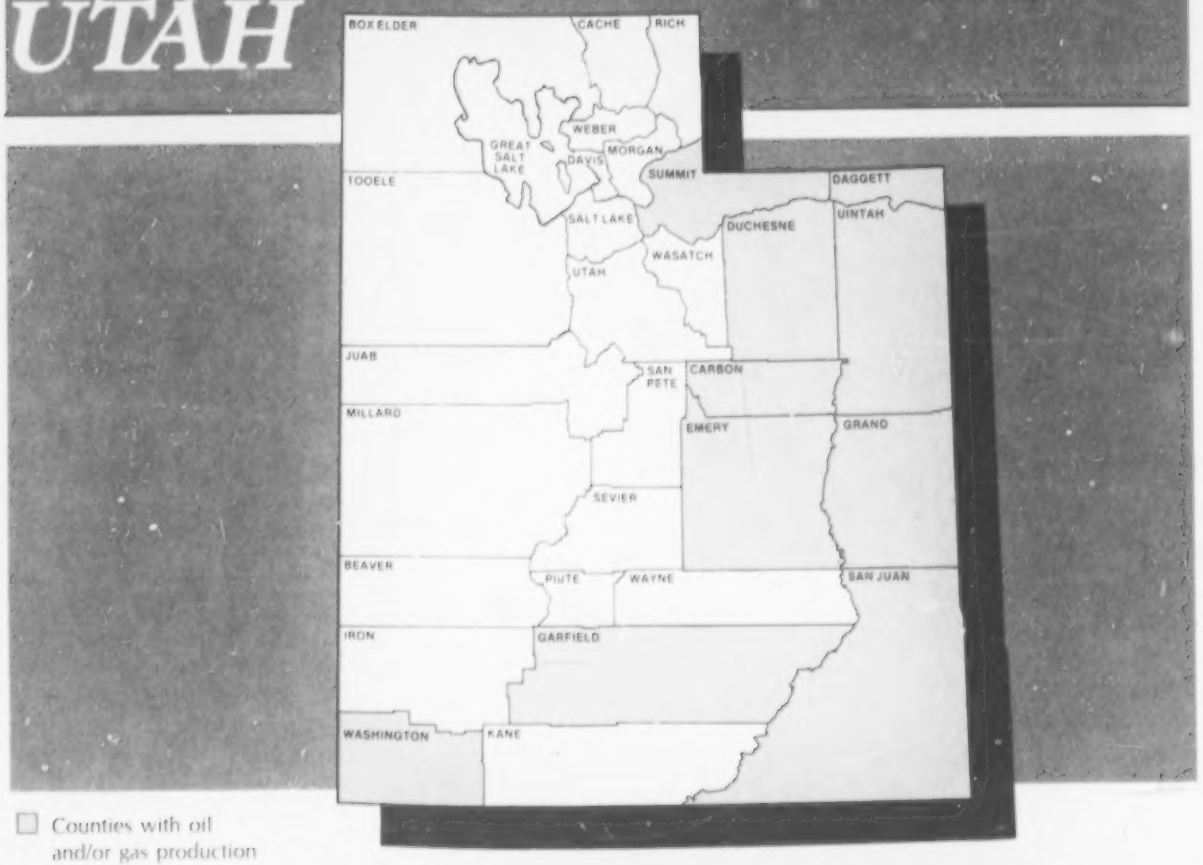
Stripper oil reserves as of 12/31/85: (thous. bbls.)
Primary 1,002,960
Secondary 963,640
Total 1,966,600

Percentage of total value of principal mineral production:
Crude oil — ranked 1st 59%
Natural gas — ranked 2nd 35%

State Energy Contact

Texas Railroad Commission
Office of Information Services
P.O. Drawer 12967
Austin, TX 78711
(512) 463-6710

UTAH



☐ Counties with oil and/or gas production

Background Information

Number of counties 29
With oil and/or gas production 10

First year of production:
Crude oil 1907
Natural gas 1886

Year and amount of peak production:
Crude oil — 42,301 thous. bbls. 1975
Natural gas — 94,255 MMcf 1982

Deepest well drilled: (ft.)
Crude oil 17,732
Natural gas 19,500
Dry hole 21,874

Cumulative number of total wells drilled as of 12/31/86: (excluding service wells)

Oil wells	3,329	40%
Gas wells	1,363	16%
Dry holes	3,604	44%
Total	8,296	100%

Cumulative crude oil wellhead value as of 12/31/86: (thous. $) $8,887,586

Cumulative production & new reserves as of 12/31/85: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	1,095	479	1,574	4,142
Production	819	98	917	1,853

Value of Oil and Gas

Average 1986 wellhead price:
Crude oil ($/bbl.) $13.30
Natural gas ($/Mcf) $2.67

Wellhead value of 1986 production: (thous. $)
Crude oil $520,988
Natural gas $235,304
Total $756,292

Average 1986 natural gas price to: ($/Mcf)
Residential consumers $4.64
Commercial consumers $4.75
Industrial consumers $3.00
Electric utilities $5.80
All consumers $4.13

Severance taxes paid in 1986 (thous. $) $46,110

1986 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	5	88	93
Gas	1	51	52
Dry	28	20	48
Service	- -	0	0
Total	34	159	193

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	32.2	740.9	773.1
Gas	7.4	332.6	339.9
Dry	189.0	95.4	284.5
Service	- -	0.0	0.0
Total	228.6	1,168.9	1,397.6

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 27
New-field wildcat footage (thous. ft.) 187.8

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	17th	19th
Production	10th	17th
Reserves (1985)	9th	10th

Seismic crew months worked 10
Average rotary rigs active 11

Number of producing wells: (12/31/86)
Crude oil 1,858
Flowing 372
Artificial lift 1,486
Natural gas 411
Total 2,269

Average production:	thous. bbls.	thous. b/d
Crude oil	39,172	107
NGL	10,000	27
Total	49,172	134

Natural gas marketed production (MMcf) 88,129
Average output per producing well:
Crude oil (bbls.) 21,083
Natural gas (Mcf) 214,426

Average number of employees in:
Oil and gas extraction 2,427
Refining 795
Transportation 2,444
Wholesale 1,645
Retail 4,965
Total petroleum industry 12,276

1985 Latest Data

Petroleum reserve position as of 12/31/85:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	127	38	165
Production	23	15	38
Net annual change	104	23	127
Proved reserves	276	240	516

Natural gas reserve position as of 12/31/85:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	74	-28	46
Production	24	59	83
Net annual change	50	-87	-37
Proved reserves	391	1,897	2,288

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well($)	Cost/ ft. ($)
Oil	196,861	1,020,008	121.21
Gas	70,007	1,129,142	188.92
Dry	98,553	1,026,589	161.51
Total	365,421	1,041,085	140.28

Number of producing strippers 519
Number of stripper well abandonments 75

Stripper well crude oil production:
(bbls.) 1,550,305
(b/d) 4,247
Percentage of oil produced by stripper wells 4%

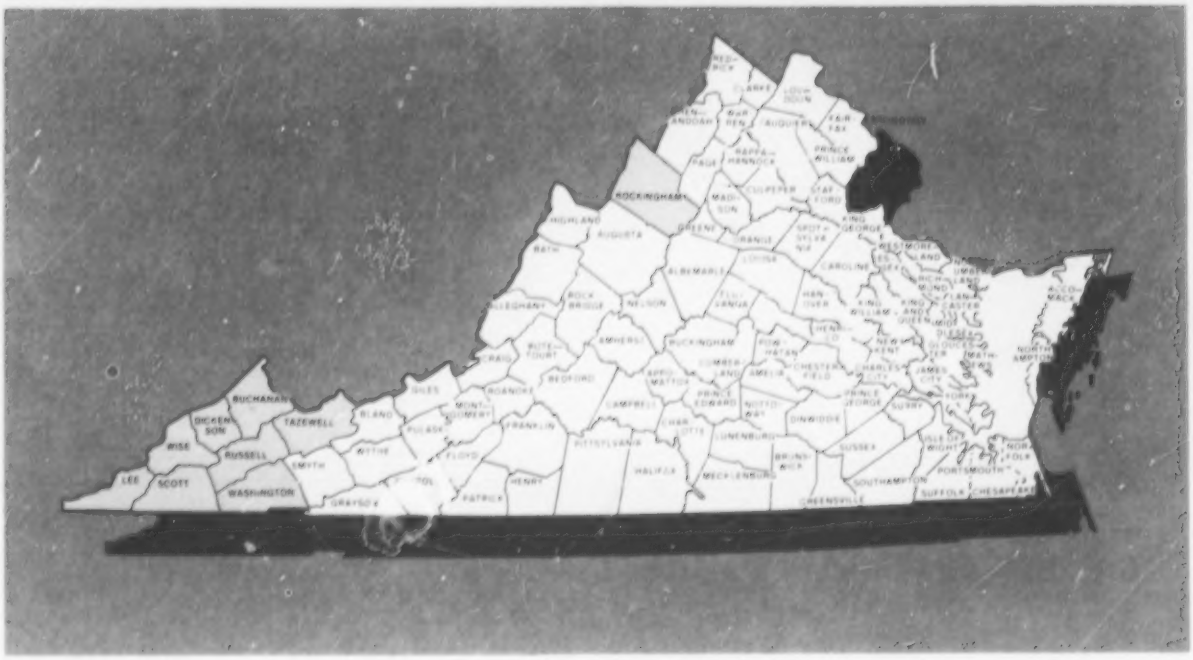
Stripper oil reserves as of 12/31/85: (thous. bbls.)
Primary 8,585
Secondary 7,025
Total 15,610

Percentage of total value of principal mineral production:
Crude oil — ranked 1st 50%
Natural gas — ranked 2nd 15%

State Energy Contact

Utah Geological and Mining Survey
Division of Oil, Gas and Mining
606 Black Hawk Way
Salt Lake City, UT 84108
(801) 581-6831

VIRGINIA



☐ Counties with oil and/or gas production

Background Information

Number of counties 96
With oil and/or gas production 9

First year of production:
Crude oil 1943
Natural gas 1931

Year and amount of peak production:
Crude oil — 65 thous. bbls. 1983
Natural gas — 20,000 MMcf 1986

Deepest well drilled: (ft.)
Crude oil 5,175
Natural gas 7,238
Dry hole 17,003

Cumulative number of total wells drilled as of 12/31/86: (excluding service wells)

Oil wells	61	7%
Gas wells	623	76%
Dry holes	141	17%
Total	825	100%

Cumulative crude oil wellhead value as of 12/31/86: (thous. $) $7,974

Cumulative production & new reserves as of 12/31/85: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	n/a	0	- -	n/a
Production	n/a	0	- -	n/a

Value of Oil and Gas

Average 1986 wellhead price:
Crude oil ($/bbl.) $15.00
Natural gas ($/Mcf) $2.45

Wellhead value of 1986 production: (thous. $)
Crude oil $270
Natural gas $49,000
Total $49,270

Average 1986 natural gas price to: ($/Mcf)
Residential consumers $6.55
Commercial consumers $5.47
Industrial consumers $3.92
Electric utilities $2.11
All consumers $5.50

Severance taxes paid in 1986 (thous. $) ..... n/a

Compiled by IPAA—September 1987

1986 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	0	0	0
Gas	1	130	131
Dry	6	0	6
Service	- -	0	0
Total	7	130	137

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	0.0	0.0	0.0
Gas	5.2	700.9	706.1
Dry	33.0	0.0	33.0
Service	- -	0.0	0.0
Total	38.2	700.9	739.1

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 6
New-field wildcat footage (thous. ft.) 33.0

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	- -	13th
Production	31st	22nd
Reserves (1985)	- -	22nd

Seismic crew months worked 7
Average rotary rigs active 5

Number of producing wells: (12/31/86)
Crude oil 32
Flowing 0
Artificial lift 32
Natural gas 562
Total 594

Average production:	thous. bbls.	thous. b/d
Crude oil	18	- -
NGL	0	0
Total	18	- -

Natural gas marketed production (MMcf) 20,000
Average output per producing well:
Crude oil (bbls.) 563
Natural gas (Mcf) 35,587

Average number of employees in:
Oil and gas extraction 0
Refining 50
Transportation 2,790
Wholesale 7,780
Retail 15,730
Total petroleum industry 26,350

1985 Latest Data

Petroleum reserve position as of 12/31/85:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	n/a	0	- -
Production	- -	0	- -
Net annual change	- -	- -	- -
Proved reserves	n/a	0	- -

Natural gas reserve position as of 12/31/85:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	0	34	34
Production	0	15	15
Net annual change	0	19	19
Proved reserves	0	235	235

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	- -	- -	- -
Gas	- -	- -	- -
Dry	- -	- -	- -
Total	n/a	- -	- -

Number of producing strippers 30
Number of stripper well abandonments 2

Stripper well crude oil production:
(bbls.) 20,666
(b/d) 57
Percentage of oil produced by stripper wells 77%

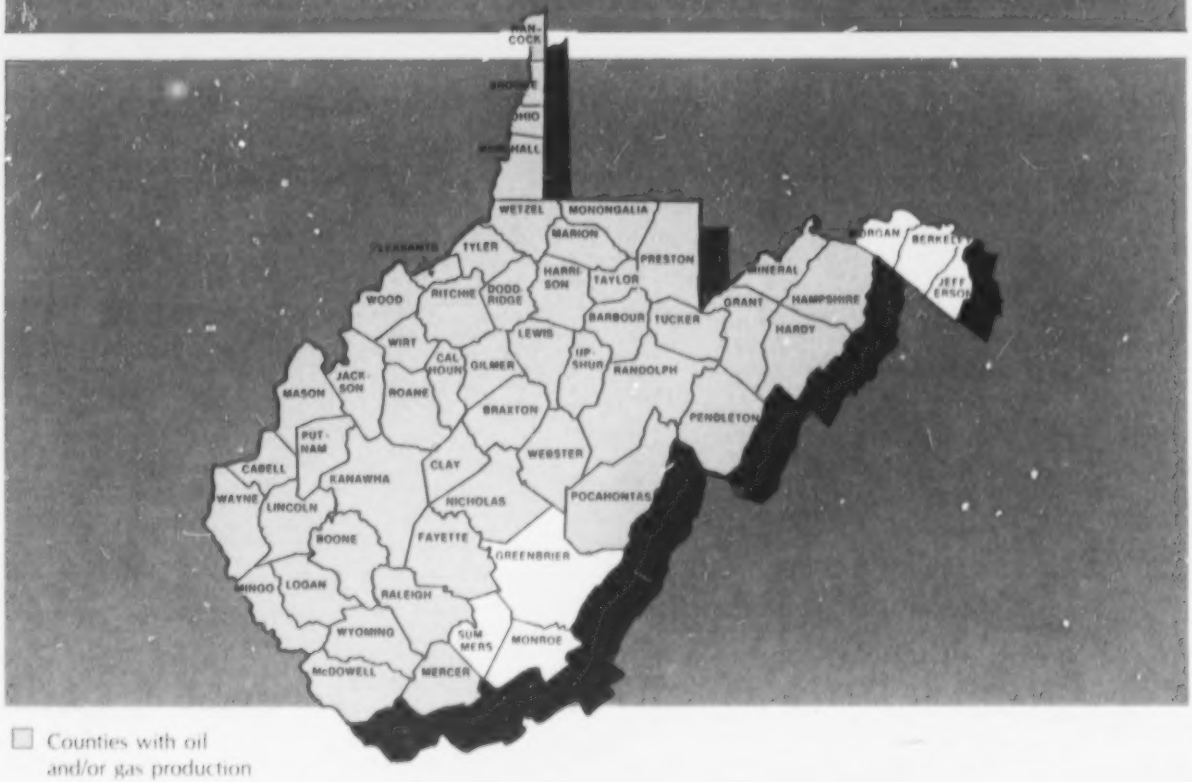
Stripper oil reserves as of 12/31/85: (thous. bbls.)
Primary 55
Secondary 5
Total 60

Percentage of total value of principal mineral production:
Crude oil — ranked 8th ..... Less than 1%
Natural gas — ranked 3rd 3%

State Energy Contact

Virginia Energy Dept., Office of Oil and Gas
P.O. Box 1197
Richmond, VA 23209
(804) 786-3611

WEST VIRGINIA



☐ Counties with oil and/or gas production

Background Information

Number of counties	55
With oil and/or gas production	49
First year of production:	
Crude oil	1860
Natural gas	1885
Year and amount of peak production:	
Crude oil — 16,196 thous. bbls.	1900
Natural gas — 242,452 MMcf	1970
Deepest well drilled: (ft.)	
Crude oil	6,785
Natural gas	14,300
Dry hole	20,222

Cumulative number of total wells drilled as of 12/31/86: (excluding service wells)

Oil wells	47,462	42%
Gas wells	45,498	40%
Dry holes	19,556	18%
Total	112,516	100%

Cumulative crude oil wellhead value as of 12/31/86: (thous. $) $2,045,481

Cumulative production & new reserves as of 12/31/85: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	585	353	938	18,282
Production	545	267	812	16,105

Value of Oil and Gas

Average 1986 wellhead price:	
Crude oil ($/bbl.)	$14.68
Natural gas ($/Mcf)	$3.90
Wellhead value of 1986 production: (thous. $)	
Crude oil	$46,169
Natural gas	$507,226
Total	$553,395

Average 1986 natural gas price to: ($/Mcf)	
Residential consumers	$6.49
Commercial consumers	$6.05
Industrial consumers	$4.01
Electric utilities	$3.99
All consumers	$5.73

Severance taxes paid in 1986 (thous. $) $55,331

1986 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	0	89	89
Gas	7	579	586
Dry	2	4	6
Service	- -	0	0
Total	9	672	681

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	0.0	229.2	229.2
Gas	40.7	2,462.4	2,503.1
Dry	13.5	10.3	23.8
Service	- -	0.0	0.0
Total	54.2	2,701.9	2,756.1

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 1
New-field wildcat footage (thous. ft.) 7.5

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	18th	4th
Production	24th	14th
Reserves (1985)	21st	11th

Seismic crew months worked 2
Average rotary rigs active 15

Number of producing wells: (12/31/86)
Crude oil 15,750
Flowing 0
Artificial lift 15,750
Natural gas 33,150
Total 48,900

Average production:	thous. bbls.	thous. b/d
Crude oil	3,145	9
NGL	5,155	14
Total	8,300	23

Natural gas marketed production (MMcf) 130,058
Average output per producing well:
Crude oil (bbls.) 200
Natural gas (Mcf) 3,923

Average number of employees in:
Oil and gas extraction 4,670
Refining 554
Transportation 4,982
Wholesale 1,514
Retail 4,745
Total petroleum industry 16,465

1985 Latest Data

Petroleum reserve position as of 12/31/85:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	-33	13	-20
Production	3	7	10
Net annual change	-36	6	-30
Proved reserves	40	86	126

Natural gas reserve position as of 12/31/85:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	5	99	104
Production	5	168	173
Net annual change	0	-69	-69
Proved reserves	73	2,104	2,177

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	- -	- -	- -
Gas	- -	- -	- -
Dry	- -	- -	- -
Total	n/a	- -	- -

Number of producing strippers 15,500
Number of stripper well abandonments 74

Stripper well crude oil production:
(bbls.) 3,346,000
(b/d) 9,167
Percentage of oil produced by stripper wells 100%

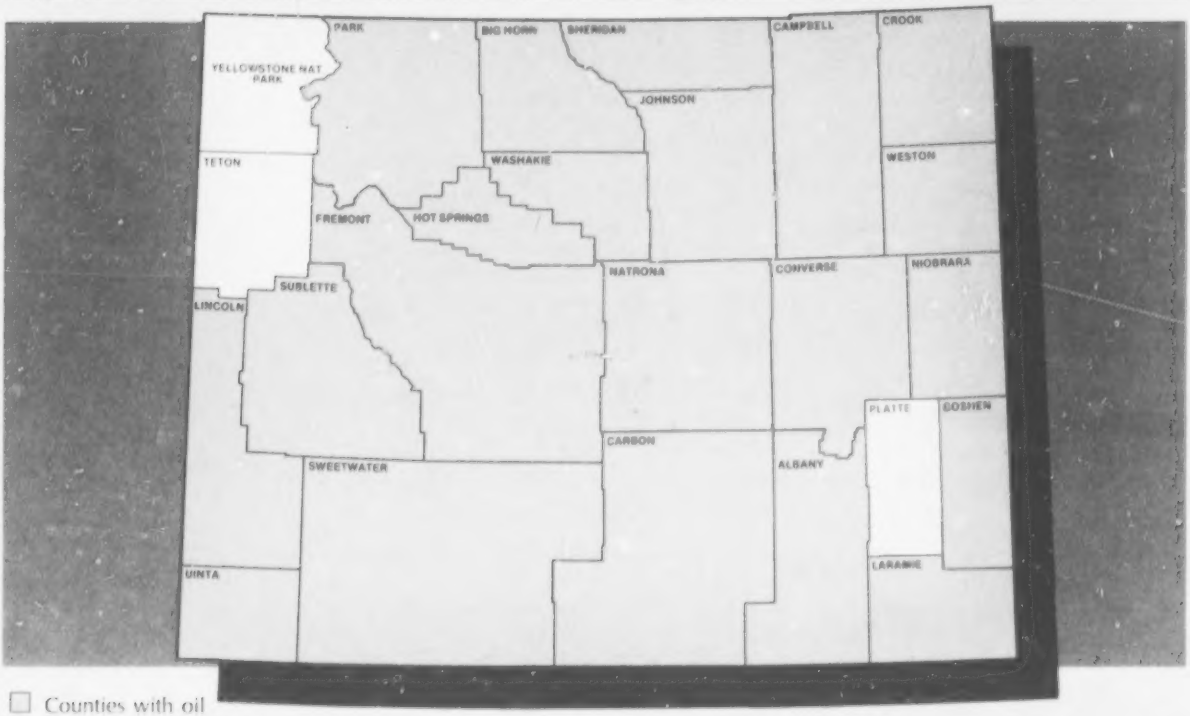
Stripper oil reserves as of 12/31/85: (thous. bbls.)
Primary 16,354
Secondary 24,531
Total 40,885

Percentage of total value of principal mineral production:
Crude oil — ranked 2nd 2%
Natural gas — ranked 1st 11%

State Energy Contact

West Virginia Department of Mines
Oil and Gas Division
1615 Washington Street, East
Charleston, WV 25311
(304) 348-3500

WYOMING



☐ Counties with oil and/or gas production

Background Information

Number of counties 23
With oil and/or gas production 20

First year of production:
Crude oil 1867
Natural gas 1889

Year and amount of peak production:
Crude oil — 160,345 thous. bbls. 1970
Natural gas — 516,683 MMcf 1984

Deepest well drilled: (ft.)
Crude oil 19,612
Natural gas 24,877
Dry hole 25,764

Cumulative number of total wells drilled as of 12/31/86: (excluding service wells)

Oil wells	25,926	51%
Gas wells	3,627	7%
Dry holes	20,970	42%
Total	50,523	100%

Cumulative crude oil wellhead value as of 12/31/86: (thous. $) $38,182,290

Cumulative production & new reserves as of 12/31/85: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	6,097	900	6,997	22,587
Production	5,158	377	5,535	11,358

Value of Oil and Gas

Average 1986 wellhead price:
Crude oil ($/bbl.) $12.94
Natural gas ($/Mcf) $2.52

Wellhead value of 1986 production: (thous. $)
Crude oil $1,570,101
Natural gas $1,248,557
Total $2,818,658

Average 1986 natural gas price to: ($/Mcf)
Residential consumers $4.93
Commercial consumers $3.92
Industrial consumers $2.94
Electric utilities $3.89
All consumers $3.96

Severance taxes paid in 1986 (thous. $) $137,999

1986 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	55	276	331
Gas	10	39	49
Dry	293	121	414
Service	- -	12	12
Total	358	448	806

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	542.4	1,473.8	2,016.2
Gas	119.8	390.2	510.0
Dry	2,478.9	843.3	3,322.2
Service	- -	52.2	52.2
Total	3,141.1	2,759.5	5,900.6

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 290
New-field wildcat footage (thous. ft.) 2,506.4

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	9th	20th
Production	6th	5th
Reserves (1985)	5th	6th

Seismic crew months worked 2
Average rotary rigs active 36

Number of producing wells: (12/31/86)
Crude oil 11,879
Flowing 784
Artificial lift 11,095
Natural gas 2,084
Total 13,963

Average production:	thous. bbls.	thous. b/d
Crude oil	121,337	332
NGL	33,000	90
Total	154,337	422

Natural gas marketed production (MMcf) 495,459
Average output per producing well:
Crude oil (bbls.) 10,214
Natural gas (Mcf) 237,744

Average number of employees in:
Oil and gas extraction 10,991
Refining 918
Transportation 1,413
Wholesale 1,316
Retail 2,545
Total petroleum industry 17,183

1985 Latest Data

Petroleum reserve position as of 12/31/85:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	108	109	217
Production	111	43	154
Net annual change	-3	66	63
Proved reserves	951	709	1,660

Natural gas reserve position as of 12/31/85:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	-80	753	673
Production	77	381	458
Net annual change	-157	372	215
Proved reserves	710	10,519	11,229

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	320,229	451,663	72.43
Gas	207,086	2,724,810	255.81
Dry	293,506	432,900	53.97
Total	820,820	561,053	76.93

Number of producing strippers 5,200
Number of stripper well abandonments ..... n/a
Stripper well crude oil production:
(bbls.) 7,983,353
(b/d) 21,872
Percentage of oil produced by stripper wells 6%

Stripper oil reserves as of 12/31/85: (thous. bbls.)
Primary 103,795
Secondary 61,125
Total 164,920

Percentage of total value of principal mineral production:
Crude oil — ranked 1st 48%
Natural gas — ranked 2nd 19%

State Energy Contact

Wyoming Oil and Gas Conservation Commission
777 West First Street, P.O. Box 2640
Casper, WY 82602
(307) 234-7147

Exploration

Seismic Exploration Activity

(crew months)	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Alabama	13	32	50	126	156	116	105	157	78	16
Alaska	24	16	30	37	82	129	58	79	48	16
Arizona	1	8	54	35	33	9	4	7	4	5
Arkansas	45	48	35	37	67	117	117	40	57	12
California	65	119	122	157	192	221	186	152	149	125
Colorado	42	61	58	87	56	141	176	208	131	84
Florida	17	18	17	21	42	20	37	10	18	6
Illinois	4	3	10	5	9	16	11	13	11	1
Indiana	0	0	0	6	0	1	3	13	3	0
Kansas	28	64	88	76	65	98	75	114	69	35
Kentucky	7	1	7	23	12	4	24	3	3	1
Louisiana	318	560	665	654	501	563	423	436	280	157
Maryland	1	0	1	4	6	2	2	1	0	1
Michigan	180	244	111	145	239	159	160	144	241	259
Mississippi	199	173	154	168	175	180	124	85	78	38
Montana	57	155	135	202	388	224	156	125	43	47
Nebraska	5	2	24	13	17	20	14	16	8	7
Nevada	38	45	51	47	41	61	39	54	60	16
New Mexico	53	89	85	120	136	156	116	114	63	71
New York	12	2	2	11	7	7	7	12	9	7
North Dakota	96	269	269	242	268	252	114	74	79	42
Ohio	3	2	1	3	8	3	15	12	9	2
Oklahoma	103	234	240	169	301	256	316	231	202	130
Oregon	9	4	0	9	27	27	13	33	19	8
Pennsylvania	21	41	33	39	49	37	27	3	17	13
South Dakota	1	63	3	2	3	9	14	4	0	7
Tennessee	8	9	26	30	34	24	17	19	4	0
Texas	722	1,095	1,213	1,438	1,745	1,583	1,353	1,199	932	481
Utah	71	163	106	158	122	127	111	121	29	10
Virginia	0	4	17	24	31	18	9	3	6	7
West Virginia	8	11	15	24	23	9	17	17	4	2
Wyoming	183	211	366	274	317	253	323	306	163	114
Other	529	138	134	227	269	258	208	297	80	46
Total Land	**2,863**	**3,884**	**4,122**	**4,613**	**5,421**	**5,098**	**4,374**	**4,102**	**2,897**	**1,766**
Total Marine	**200**	**263**	**278**	**348**	**456**	**578**	**569**	**577**	**597**	**258**
TOTAL U.S.	**3,063**	**4,148**	**4,400**	**4,962**	**5,877**	**5,676**	**4,943**	**4,679**	**3,494**	**2,024**

Source: Society of Exploration Geophysicists

Note: Data include government and university activity, but exclude gravity, magnetic and other geophysical methods.

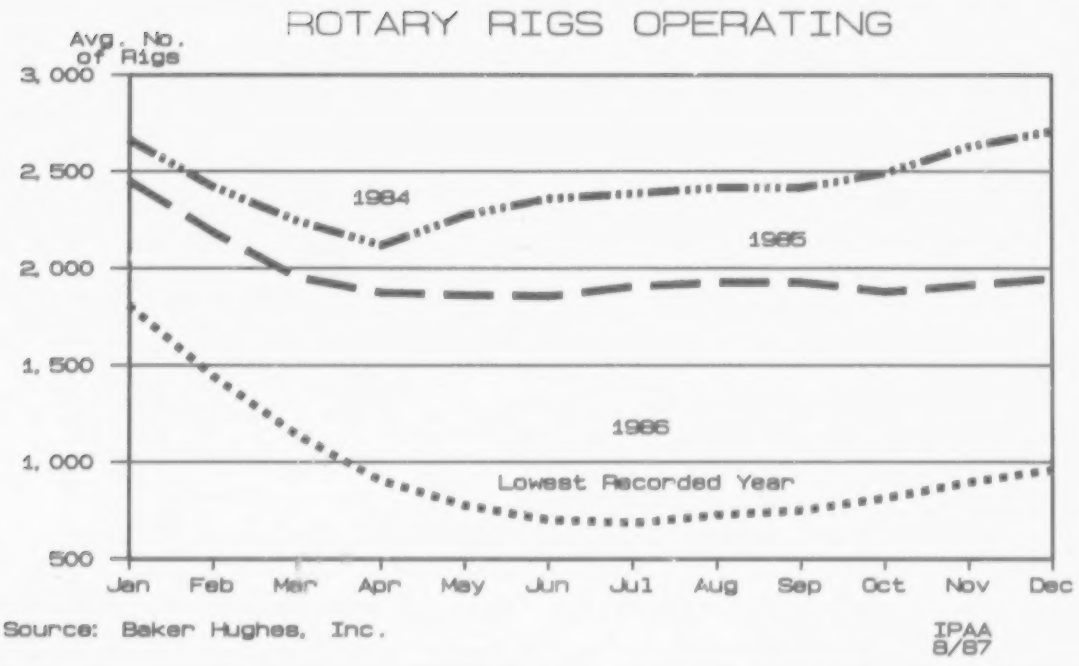
Rotary Rigs Operating

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Alabama	14	13	13	11	17	15	16	15	22	10
Alaska	15	16	14	14	23	22	14	14	20	13
Arizona	†	†	0	1	1	1	†	0	†	0
Arkansas	15	14	10	27	34	27	26	26	24	9
California	90	94	96	120	155	129	106	107	81	49
Colorado	45	41	40	61	82	60	52	54	50	24
Florida	6	6	5	4	8	5	4	4	7	2
Illinois	16	28	13	25	45	76	61	41	29	6
Indiana	3	4	†	†	1	7	6	7	4	1
Kansas	67	76	66	120	196	157	125	128	92	47
Kentucky	2	3	†	2	5	10	8	8	6	2
Louisiana	292	338	347	427	456	343	282	310	283	142
Michigan	24	24	25	31	37	31	29	34	34	24
Mississippi	42	45	40	58	72	42	33	32	31	15
Montana	27	30	33	49	81	36	24	36	23	10
Nebraska	9	10	9	14	15	9	9	9	7	3
Nevada	3	3	4	5	5	3	1	5	5	3
New Mexico	70	76	88	118	135	103	65	78	71	29
New York	7	7	9	7	12	15	10	9	5	2
North Dakota	24	39	56	83	119	69	42	51	39	13
Ohio	33	46	46	74	98	57	40	51	29	18
Oklahoma	233	258	247	397	698	622	285	319	252	142
Oregon	†	†	1	†	2	†	†	1	1	0
Pennsylvania	15	25	29	29	39	33	22	36	30	17
South Dakota	3	2	1	2	2	2	1	2	2	1
Texas	779	855	770	987	1,317	990	797	850	680	312
Utah	30	32	29	42	69	40	37	45	29	11
Virginia	1	1	1	1	3	3	2	3	4	5
West Virginia	17	27	30	38	45	49	34	38	26	15
Wyoming	118	136	147	155	191	143	96	115	93	36
Other	1	10	8	7	7	6	5	0	1	3
TOTAL U.S.	**2,001**	**2,259**	**2,177**	**2,909**	**3,970**	**3,105**	**2,232**	**2,428**	**1,980**	**964**

Source: Baker Hughes, Inc.

† Averages less than one rig

Note: Data include offshore rigs.



A BIRD IN THE HAND
A full-portfolio gas purchaser, not just a broker.
Seagull has its own oil and gas reserves, its own pipelines and experience as a gas marketer since 1973.
Today it has the ability to move your gas to markets throughout the country—efficiently and on the best possible terms.

SEAGULL ENERGY CORPORATION
A bird in the hand

Seagull Energy Corporation
1001 Fannin Suite 1700
Houston, Texas 77002

For prompt attention, call:
1-800 231-7502
(In Texas, 1-800 392-7701)

Retail Gasoline Prices

(¢/gal.)	Excluding Taxes	Taxes	Pump Price
1970	23.08	11.58	34.66
1971	23.88	10.94	34.82
1972	24.31	11.13	35.44
1973	26.93	11.20	38.13
1974	40.40	11.30	51.70
1975	45.67	11.31	56.98
1976	47.48	11.45	58.93
1977	50.82	11.52	62.34
1978	53.06	11.57	64.63
1979	73.38	11.71	85.09
1980	107.07	11.83	118.90
1981	119.91	13.01	132.92
1982	111.29	14.23	125.52
1983	102.69	19.19	121.88
1984	99.57	21.14	120.71
1985	93.91	21.86	115.77
1986	69.57	22.10	91.67

Source: *Oil and Gas Journal*
Note: Motor gasoline prices represent regular leaded prior to 1985, and regular unleaded thereafter.

World Crude Oil Reserves

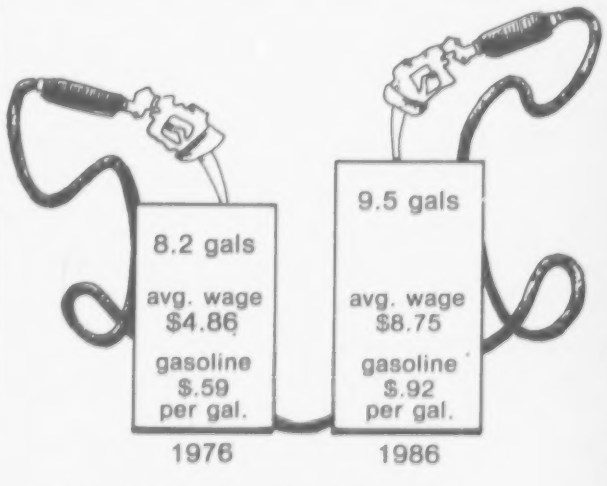
(mill. bbls.)	United States	Canada	Latin America	Middle East	Africa	Asia Pacific	Western Europe	Communist Nations	Total World
1976	33,502	6,247	29,609	367,681	60,570	19,391	24,539	101,100	640,090
1977	31,780	5,971	40,270	366,166	59,200	19,749	26,863	98,000	645,805
1978	31,335	6,860	41,247	369,996	57,892	20,007	23,966	94,000	641,772
1979	29,810	6,800	56,473	361,947	57,072	19,355	23,476	90,000	642,175
1980	29,805	6,400	69,490	362,071	55,148	19,631	23,085	86,300	651,930
1981	29,426	7,300	84,982	362,840	56,172	19,151	24,635	85,845	670,350
1982	27,858	7,020	78,482	369,286	57,822	19,756	22,924	85,115	668,262
1983	27,735	6,730	81,676	370,101	56,907	18,969	23,020	84,600	669,738
1984	28,446	7,075	83,316	398,381	55,541	18,530	24,426	84,100	699,813
1985	28,416	6,500	84,242	398,036	56,734	18,856	26,413	81,370	700,567
1986	24,560*	6,850	88,755	401,879	55,194	19,024	21,938	79,250	697,450*

Sources: American Petroleum Institute,
Energy Information Administration,
and *Oil and Gas Journal*

Notes: Totals may not add due to rounding.
Data quoted as of December 31st.

* Preliminary estimate

ONE HOUR'S WAGE BUYS:



Sources: Retail price (incl. taxes) of regular gasoline:
Oil & Gas Journal, 1986
Leaded 1976, Unleaded 1986
Avg. hourly earnings: Bureau of Labor Statistics

FOR SAFELY RUNNING, ROTATING, & SUCCESSFULLY CEMENTING LINERS

. . . . . including the DIRECTIONAL, DEEP, HEAVY & OTHER TOUGH ONES!

ALEXANDER OIL TOOLS INC.

for 24 hour service, call
Houston 713-469-6934
New Orleans 504-392-2285

PRIMARY CEMENTING SPECIALISTS

4450 Gen. DeGaulle Dr. • Ste. 1212 • New Orleans, LA 70131

Drilling

New-Field Wildcats Drilled

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Alabama	44	57	92	73	71	79	84	121	143	74
Alaska	14	6	12	16	14	7	0	9	3	0
Arizona	2	0	2	6	8	6	11	2	1	5
Arkansas	74	95	99	109	146	120	148	124	109	66
California	90	108	113	140	132	94	91	108	87	45
Colorado	286	309	294	353	509	366	298	368	355	174
Florida	13	15	10	8	10	12	13	12	10	6
Illinois	52	78	56	107	167	251	417	295	155	100
Indiana	67	104	63	104	95	113	124	95	102	34
Kansas	310	311	368	386	480	362	345	227	246	359
Kentucky	75	73	86	89	99	177	145	128	54	92
Louisiana	484	567	531	673	800	659	551	672	556	310
Michigan	294	266	247	313	402	449	304	536	442	225
Mississippi	260	237	232	280	355	268	252	282	259	104
Missouri	8	6	9	8	28	11	17	13	9	5
Montana	197	245	255	277	400	204	142	202	192	110
Nebraska	207	242	243	237	269	191	167	176	149	57
Nevada	8	13	11	20	25	10	o	31	24	17
New Mexico	122	149	157	214	248	205	117	112	130	47
New York	35	32	25	30	25	5	10	10	6	4
North Dakota	78	127	113	192	332	246	127	180	133	71
Ohio	8	6	21	4	20	35	27	30	22	19
Oklahoma	211	197	176	196	267	263	168	161	144	126
Oregon	2	0	10	24	11	2	0	2	1	1
Pennsylvania	36	17	19	22	16	21	3	18	24	6
South Dakota	16	21	25	29	46	30	33	14	15	16
Tennessee	88	91	116	222	256	328	311	163	100	32
Texas	2,571	2,860	2,588	2,698	3,154	2,293	1,714	1,762	1,483	834
Utah	88	65	65	76	136	108	101	101	42	27
Virginia	4	2	4	2	6	13	13	3	2	6
West Virginia	21	16	16	22	39	26	10	7	7	1
Wyoming	371	393	323	369	551	386	395	506	450	290
Other	26	23	42	33	34	45	42	89	114	70
TOTAL U.S.	**6,162**	**6,731**	**6,423**	**7,332**	**9,151**	**7,386**	**6,206**	**6,559**	**5,569**	**3,333**

Source: American Petroleum Institute

Notes: Data include oil wells, gas wells and dry holes. Federal offshore wells are included in "Other".

Exploratory Wells Drilled

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Alabama	47	60	101	77	75	79	84	121	143	78
Alaska	21	12	14	16	20	10	3	12	5	1
Arizona	2	0	2	6	8	7	11	2	2	5
Arkansas	82	95	105	111	154	128	155	133	122	83
California	275	359	395	443	538	468	203	206	187	122
Colorado	392	449	456	553	849	653	509	579	563	278
Florida	14	15	11	8	10	12	13	12	10	6
Illinois	238	277	284	487	736	695	845	728	493	246
Indiana	276	268	183	327	347	451	458	406	396	126
Kansas	1,043	1,181	1,022	1,237	1,848	1,838	1,723	2,277	1,489	1,086
Kentucky	368	353	423	619	870	1,119	1,404	975	597	163
Louisiana	640	782	665	808	971	801	593	764	618	404
Michigan	297	267	255	316	402	449	306	536	451	246
Mississippi	272	241	242	310	357	268	252	282	260	109
Missouri	8	6	15	22	78	79	45	28	15	5
Montana	273	324	349	382	521	275	185	253	221	136
Nebraska	235	265	265	252	279	197	189	180	160	83
Nevada	12	14	11	20	28	11	8	32	25	18
New Mexico	180	205	212	273	358	314	192	225	288	156
New York	49	45	60	59	79	44	44	30	18	7
North Dakota	111	162	175	256	461	371	211	279	219	126
Ohio	81	77	114	66	151	180	114	110	84	26
Oklahoma	490	495	479	554	733	707	569	516	404	209
Oregon	2	0	17	32	20	8	0	2	3	8
Pennsylvania	116	94	105	255	342	165	92	105	60	17
South Dakota	20	21	32	33	47	33	34	16	16	17
Tennessee	177	149	163	293	333	413	335	164	116	52
Texas	3,726	4,085	3,910	4,354	5,688	5,077	4,553	5,120	4,170	2,495
Utah	103	80	89	112	208	149	133	113	54	34
Virginia	9	5	4	2	6	26	15	3	3	7
West Virginia	115	151	124	119	170	156	65	38	36	9
Wyoming	440	470	411	435	708	537	478	606	551	358
Other	26	23	42	33	35	46	44	93	115	74
TOTAL U.S.	**10,140**	**11,030**	**10,735**	**12,870**	**17,430**	**15,766**	**13,865**	**14,946**	**11,894**	**6,790**

Source: American Petroleum Institute

Notes: Data include oil wells, gas wells and dry holes. Federal offshore wells are included in "Other".

Development Wells Drilled

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Alabama	88	101	118	119	142	133	149	265	215	140
Alaska	48	55	71	108	146	200	157	191	63	173
Arizona	2	8	1	0	5	1	1	0	1	0
Arkansas	399	347	393	496	723	680	728	739	875	397
California	1,938	1,639	1,592	2,072	2,593	2,107	2,212	3,287	3,003	1,903
Colorado	791	701	607	857	1,122	1,173	992	1,222	963	739
Florida	15	11	20	11	15	9	7	12	11	8
Illinois	851	855	967	1,828	2,550	2,433	2,272	2,207	1,781	916
Indiana	337	401	302	406	460	571	539	524	539	241
Kansas	2,899	3,312	3,338	4,923	6,542	6,491	5,595	4,169	3,905	1,812
Kentucky	688	657	709	1,463	2,030	2,583	2,828	2,795	1,829	634
Louisiana	2,753	3,001	3,358	4,223	4,362	4,244	4,371	6,005	4,743	2,155
Michigan	243	257	264	345	362	435	468	569	393	243
Mississippi	255	248	281	360	431	316	298	332	311	184
Missouri	4	26	56	143	189	104	133	85	62	5
Montana	400	453	471	507	744	536	329	560	382	201
Nebraska	186	183	184	260	327	212	182	186	114	54
Nevada	6	7	0	1	2	0	1	5	9	0
New Mexico	1,210	1,375	1,396	1,793	2,099	1,733	1,303	1,400	1,432	754
New York	345	330	437	436	492	623	396	580	407	182
North Dakota	131	178	265	360	417	325	278	421	277	92
Ohio	2,685	2,254	3,532	5,023	5,926	4,618	4,359	4,842	3,604	1,632
Oklahoma	4,821	5,641	6,477	9,568	12,357	10,660	8,474	9,049	7,073	4,035
Oregon	0	0	4	9	0	0	0	0	2	2
Pennsylvania	1,433	2,013	2,068	2,833	3,517	3,168	2,526	3,368	2,682	717
South Dakota	23	29	17	41	43	20	18	28	31	0
Tennessee	110	115	185	257	295	214	208	202	109	94
Texas	10,898	11,260	11,414	15,172	20,291	19,707	19,170	21,867	19,168	10,055
Utah	184	186	187	177	347	313	285	380	299	159
Virginia	16	26	21	25	26	71	24	64	85	130
West Virginia	1,112	1,352	1,445	1,752	1,948	1,921	1,566	1,867	1,341	672
Wyoming	827	996	963	1,037	1,289	1,124	1,009	1,152	910	436
Other	17	14	12	11	12	26	42	26	30	41
TOTAL U.S.	**35,715**	**39,031**	**41,155**	**56,616**	**71,804**	**66,751**	**60,720**	**68,399**	**56,649**	**28,806**

Source: American Petroleum Institute

Notes: Data include oil wells, gas wells and dry holes. Federal offshore wells are included in "Other".

Total Wells Drilled

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Alabama	136	161	219	196	222	214	233	386	358	218
Alaska	73	76	96	125	172	227	164	214	69	178
Arizona	4	8	4	6	14	14	12	2	3	5
Arkansas	491	450	504	612	889	825	906	897	1,018	480
California	2,553	2,485	2,340	3,039	3,838	3,097	2,817	3,920	3,450	2,052
Colorado	1,212	1,156	1,069	1,414	1,977	1,832	1,503	1,807	1,548	1,019
Florida	32	29	32	21	25	21	20	24	21	14
Illinois	1,143	1,202	1,327	2,482	3,436	3,253	3,243	2,983	2,278	1,176
Indiana	621	685	494	751	828	1,051	1,032	993	963	383
Kansas	4,060	4,576	4,436	6,266	8,551	8,561	7,324	6,562	5,489	2,905
Kentucky	1,095	1,077	1,195	2,171	3,062	3,804	4,372	3,861	2,458	801
Louisiana	3,439	3,817	4,063	5,147	5,503	5,117	5,061	6,896	5,436	2,563
Michigan	545	539	538	676	787	900	787	1,122	859	497
Mississippi	539	496	534	680	788	584	550	615	571	294
Missouri	53	49	85	266	397	305	245	260	84	10
Montana	679	778	822	902	1,289	816	518	826	605	337
Nebraska	425	451	450	514	608	414	372	377	277	145
Nevada	18	22	12	21	34	13	9	37	34	18
New Mexico	1,407	1,625	1,656	2,126	2,527	2,100	1,530	1,670	1,741	926
New York	485	427	513	507	578	668	442	610	425	189
North Dakota	242	341	440	619	879	696	489	700	496	218
Ohio	2,768	3,333	3,637	5,093	6,082	4,814	4,499	4,985	3,695	1,666
Oklahoma	5,344	6,164	6,980	10,158	13,125	11,390	9,081	9,639	7,555	4,273
Oregon	2	0	21	41	20	8	0	2	5	10
Pennsylvania	1,569	2,182	2,295	3,261	3,962	3,399	2,667	3,546	2,770	734
South Dakota	43	50	49	75	90	53	52	44	49	17
Tennessee	287	264	348	550	628	627	543	366	225	146
Texas	15,114	15,863	15,810	20,038	26,442	25,439	24,414	27,767	24,229	13,003
Utah	305	268	284	291	555	482	418	494	356	193
Virginia	25	31	25	27	32	97	39	67	88	137
West Virginia	1,267	1,537	1,612	1,924	2,170	2,114	1,654	1,941	1,381	681
Wyoming	1,281	1,489	1,392	1,518	2,043	1,719	1,531	1,813	1,514	806
Other	51	40	60	45	47	75	90	125	145	115
TOTAL U.S.	47,308	51,671	53,362	71,562	91,600	84,729	76,617	85,551	70,195	36,209

Source: American Petroleum Institute

Notes: Data include oil, gas and service wells, dry holes, stratigraphic and core tests. Federal offshore wells are included in "Other".

Cost of Drilling and Equipping Wells—1985

	No. of Wells Drilled	Footage Drilled (ft.)	Depth per Well (ft.)	Total Cost ($)	Cost per Well ($)	Cost per Foot ($)
Alabama	350	1,850,637	5,288	164,818,767	470,911	89.06
Alaska	212	1,883,669	8,885	514,594,590	2,427,333	273.19
Arkansas	989	4,075,145	4,120	238,767,072	241,423	58.59
California	3,338	8,402,170	2,517	916,502,593	274,566	109.08
Colorado	1,515	9,247,475	6,104	502,304,900	331,554	54.32
Florida	22	304,292	13,831	38,755,764	1,761,626	127.36
Illinois	2,113	5,111,993	2,419	172,274,608	81,531	33.70
Indiana	894	1,713,881	1,917	59,316,948	66,350	34.61
Kansas	5,224	19,059,780	3,649	522,647,462	100,047	27.42
Kentucky	2,304	3,230,170	1,402	88,939,756	38,602	27.53
Louisiana	5,486	31,264,374	5,699	4,593,731,613	837,355	146.93
Michigan	841	3,992,352	4,747	234,369,504	278,680	58.70
Mississippi	569	4,883,905	8,583	329,091,621	578,368	67.38
Montana	597	2,933,218	4,913	162,959,564	272,964	55.56
Nebraska	271	1,347,458	4,972	27,444,662	101,272	20.37
New Mexico	1,689	10,573,433	6,260	730,274,415	432,371	69.07
North Dakota	511	4,594,848	8,992	299,417,438	585,944	65.16
Oklahoma	7,244	37,204,151	5,136	2,529,329,663	349,162	67.99
Texas	23,114	117,813,185	5,097	7,931,867,433	343,163	67.33
Utah	351	2,604,917	7,421	365,420,835	1,041,085	140.28
Wyoming	1,463	10,669,057	7,293	820,820,415	561,053	76.93
Appalachia	8,149	28,685,852	3,520	996,790,541	122,321	34.75
Federal Waters	148	1,639,496	11,078	1,330,408,515	8,989,247	811.47
Other	427	1,404,896	3,290	125,753,867	294,506	89.51
Total Offshore	**1,247**	**12,815,948**	**10,277**	**5,079,291,692**	**4,073,209**	**396.33**
Total Onshore	**66,574**	**301,674,406**	**4,531**	**18,617,310,854**	**279,648**	**61.71**
TOTAL U.S.	**67,821**	**314,490,354**	**4,637**	**23,696,602,546**	**349,399**	**75.35**
Exploratory Wells	**12,045**	**69,699,334**	**5,787**	**6,692,382,320**	**555,615**	**96.02**
Development Wells	**55,776**	**244,791,020**	**4,389**	**17,004,220,226**	**304,866**	**69.46**

Source: *Joint Association Survey on Drilling Costs.*

Notes: Appalachia includes New York, Ohio, Pennsylvania and West Virginia.
1986 data are unavailable.

Cost Indices

	Oil Field Machinery	Oil Well Casing	Line Pipe (carbon)	Oil Field Wages
		(1967 = 100)		
1966	96.5	96.2	97.9	96.3
1967	100.0	100.0	100.0	100.0
1968	106.4	101.5	103.9	104.3
1969	112.7	104.5	109.2	110.8
1970	118.4	109.1	112.8	117.9
1971	122.6	120.7	124.7	127.7
1972	127.3	127.3	133.7	139.1
1973	133.2	133.2	139.1	147.4
1974	157.8	170.7	189.8	163.1
1975	196.3	211.5	227.8	184.9
1976	217.7	223.1	234.6	203.4
1977	236.6	244.3	260.5	220.3
1978	261.6	271.6	296.6	247.7
1979	289.7	285.8	303.4	270.2
1980	335.7	326.5	336.3	298.5
1981	401.0	407.5	394.2	331.7
1982	434.5	451.9	417.0	363.4
1983	428.4	406.1	405.6	380.9
1984	424.9	386.0	405.6	392.9
1985	426.3	381.4	405.1	409.5
1986	414.9	355.3	402.8	423.1

Sources: Bureau of Labor Statistics
Wage index computed by IPAA

Drilling Costs

	Total Costs	Per Well	Per Foot
	(thous. $)	($)	
1965	2,407,437	60,648	13.44
1966	2,360,740	68,386	14.95
1967	2,299,178	72,902	15.97
1968	2,409,360	81,463	16.83
1969	2,610,671	88,554	17.56
1970	2,578,682	94,885	18.84
1971	2,371,492	94,703	19.03
1972	2,814,166	106,424	20.76
1973	3,074,532	117,152	22.50
1974	4,366,989	138,718	28.93
1975	6,571,214	177,793	36.99
1976	7,461,680	191,615	40.46
1977	9,956,453	229,181	46.82
1978	13,061,000	279,950	56.64
1979	16,078,930	331,367	67.71
1980	22,800,356	367,682	77.03
1981	36,665,457	453,691	94.30
1982	39,428,119	514,378	108.71
1983	25,104,543	371,721	83.34
1984	25,206,219	326,463	71.90
1985	23,696,603	349,399	75.35

Source: Joint Association Survey

Depend on Bituminous... the stable insurance source for the energy business.

Bituminous has served the energy industry continuously for more than 60 years. We offer high-quality insurance protection and services —with stability. That means we don't jump in and out of the energy business like some insurance carriers.

If you're looking for broad insurance protection for your business at competitive rates, specify Bituminous.

We tailor insurance packages specifically for today's energy companies and we'll be here tomorrow, too.

Contact your local independent agent for all the facts.

Bituminous INSURANCE COMPANIES

Home office: Rock Island, Illinois 61201 · Phone 1-800-447-1662

PIA

Offices: Albuquerque, Atlanta, Baltimore, Birmingham, Charlotte, Chattanooga, Chicago, Dallas, Denver, Des Moines, Houston, Indianapolis, Kansas City, Knoxville, Little Rock, Louisville, Memphis, Milwaukee, Minneapolis, Mount Vernon, Nashville, New Orleans, Oklahoma City, Omaha, Peoria, Philadelphia, Pittsburgh, Richmond, Rock Island, Rockford, St. Louis, Southfield

Producing Wells

Producing Crude Oil Wells

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Alabama	637	630	514	669	692	719	741	759	810	844
Alaska	291	366	400	642	700	760	672	640	977	1,109
Arizona	28	31	35	32	35	36	34	31	28	24
Arkansas	7,503	7,553	7,698	8,104	8,249	8,629	8,370	9,490	9,700	10,047
California	43,454	44,999	44,674	45,591	47,362	47,231	47,197	48,541	49,874	43,717
Colorado	3,045	3,227	3,402	3,490	2,898	3,113	4,591	5,360	5,457	5,502
Florida	144	115	115	120	117	123	137	138	149	114
Illinois	23,828	23,869	24,067	24,745	26,100	27,600	28,967	30,045	31,100	32,025
Indiana	4,891	5,076	5,296	5,452	5,715	6,047	6,465	6,792	7,164	7,610
Kansas	42,450	43,258	47,379	47,457	42,402	46,189	49,348	49,198	51,888	48,816
Kentucky	14,046	14,149	14,097	14,517	14,585	15,109	15,562	19,980	21,844	22,639
Louisiana	23,881	24,500	24,767	26,014	25,320	22,380	23,376	24,508	26,354	24,635
Michigan	3,903	3,890	3,890	4,109	4,417	4,536	4,913	4,881	5,143	4,885
Mississippi	2,260	2,254	2,556	2,631	3,154	2,640	2,727	2,562	3,468	2,235
Missouri	161	161	188	258	421	499	552	557	581	450
Montana	3,354	3,275	3,573	3,628	3,968	4,311	4,675	4,201	4,196	3,933
Nebraska	1,369	1,455	1,535	1,679	1,870	2,006	2,100	2,095	2,091	1,838
Nevada	20	25	26	25	28	31	34	37	45	29
New Mexico	14,265	14,398	15,045	15,746	16,289	16,526	17,409	18,146	18,697	18,409
New York	4,800	4,900	4,800	5,000	5,300	5,320	5,432	4,678	4,811	4,632
North Dakota	1,638	1,732	1,908	2,290	2,570	2,870	3,734	3,404	3,697	3,543
Ohio	17,363	18,097	19,177	20,451	22,441	24,752	26,287	26,878	27,975	29,937
Oklahoma	73,653	74,870	76,505	78,463	82,639	91,745	95,868	99,600	102,342	100,261
Pennsylvania	28,805	28,400	27,768	27,925	26,138	25,285	24,657	20,739	24,000	20,000
South Dakota	N/A	N/A	88	118	120	130	140	138	165	148
Tennessee	272	279	338	441	489	650	693	775	798	806
Texas	163,815	165,817	168,123	174,511	180,627	187,626	195,595	203,664	209,040	201,272
Utah	863	1,291	1,346	1,478	1,543	1,583	1,634	1,799	1,944	1,858
West Virginia	13,900	14,100	14,225	14,425	14,700	14,900	15,300	15,475	15,895	15,750
Wyoming	10,103	10,011	10,059	10,227	11,574	11,792	11,349	11,561	12,038	11,879
Other	67	81	2	6	11	19	21	31	28	32
Federal Waters	3,531	3,429	3,259	3,266	4,535	4,985	4,710	4,104	4,327	4,425
TOTAL U.S.	508,340	516,238	526,855	543,510	557,009	580,142	603,290	620,807	646,626	623,404

Source: *World Oil*

Notes: Data include wells on artificial lift and flowing.
Figures quoted as of December 31st each year.

Producing Natural Gas Wells

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Alabama	133	170	264	262	309	461	540	664	822	976
Alaska	50	65	56	54	120	123	103	78	81	103
Arkansas	1,170	1,143	1,200	1,188	1,337	1,679	1,850	2,371	2,550	2,719
California	1,050	854	838	905	1,154	1,050	1,082	1,168	1,319	1,285
Colorado	1,876	2,169	2,444	2,650	3,988	3,667	4,072	3,663	4,529	3,573
Illinois	40	30	51	58	70	60	67	157	190	217
Indiana	563	596	631	655	698	720	736	1,194	1,220	1,289
Kansas	9,410	9,450	10,351	10,544	11,014	11,254	11,494	11,503	11,776	11,485
Kentucky	7,649	7,776	7,765	7,992	8,033	8,084	8,234	9,013	9,515	9,926
Louisiana	9,758	10,135	10,848	11,486	12,763	13,503	13,894	14,238	14,423	16,479
Michigan	342	376	376	423	667	667	539	749	755	740
Mississippi	285	402	431	458	570	520	525	671	690	555
Montana	1,490	1,377	1,881	2,150	2,142	2,069	2,043	2,088	2,033	1,818
Nebraska	16	22	23	22	26	22	24	21	N/A	N/A
New Mexico	11,200	12,027	12,922	13,843	14,968	16,025	16,214	16,401	23,627	22,362
New York	1,700	1,900	2,200	2,200	2,500	2,650	2,969	3,800	4,324	4,927
North Dakota	22	23	22	52	51	66	123	90	98	103
Ohio	12,105	13,643	15,271	16,845	18,619	21,070	24,621	27,846	32,148	32,745
Oklahoma	11,512	12,525	14,062	15,245	16,994	20,742	22,135	23,647	24,756	25,734
Pennsylvania	17,391	17,900	18,900	19,700	20,526	21,500	23,000	24,000	24,000	26,500
South Dakota	0	0	10	10	39	37	40	40	42	44
Tennessee	34	60	143	200	210	360	415	726	820	788
Texas	30,779	33,324	36,240	37,819	39,575	42,295	43,395	44,834	46,615	46,442
Utah	535	171	182	200	226	282	322	659	655	411
Virginia	204	223	268	274	274	290	292	499	581	562
West Virginia	22,600	23,575	24,425	25,600	26,925	28,350	29,675	30,700	32,500	33,150
Wyoming	995	888	1,007	1,504	1,888	1,889	1,919	1,933	2,161	2,084
Other	15	13	11	21	16	28	31	20	52	36
Federal Waters	2,529	2,818	2,866	2,853	3,907	4,200	4,000	3,552	3,483	3,404
TOTAL U.S.	**145,453**	**153,655**	**165,888**	**175,213**	**189,609**	**203,663**	**214,354**	**226,077**	**245,765**	**250,457**

Source: *World Oil*

Notes: Data include gas distillate wells.
Figures quoted as of December 31st each year.

Production

Crude Oil Production

(thous. bbls.)	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Alabama	18,252	19,829	19,161	22,153	20,680	20,014	18,746	19,804	21,581	21,122
Alaska	169,201	448,620	511,335	591,646	587,337	618,910	625,527	630,401	666,233	681,310
Arizona	427	418	472	406	357	335	237	215	175	161
Arkansas	20,202	20,329	18,869	18,210	18,352	18,849	18,849	18,730	19,044	15,778
California	349,609	347,181	352,268	356,923	384,958	401,572	404,688	412,020	423,877	406,665
Colorado	39,460	36,797	32,324	29,802	30,303	30,545	29,050	28,845	30,246	29,309
Florida	46,641	47,536	47,168	42,886	34,773	25,626	19,476	14,462	11,458	9,383
Illinois	25,608	23,362	21,793	22,702	24,090	27,710	29,200	28,868	30,265	27,245
Indiana	5,314	4,689	4,715	4,978	4,721	5,563	5,321	5,526	5,168	4,759
Kansas	57,496	56,586	56,995	60,151	65,810	70,525	71,594	75,729	75,407	67,034
Kentucky	6,581	5,724	5,514	5,946	6,548	7,349	7,886	7,777	7,790	6,475
Louisiana	562,905	532,740	489,687	469,141	449,315	458,395	479,569	515,268	508,239	512,108
Michigan	32,965	34,667	34,862	33,808	32,665	31,462	31,736	30,554	27,300	25,688
Mississippi	43,022	42,024	37,327	35,945	34,204	33,047	31,455	32,776	30,641	29,997
Missouri	60	54	91	130	226	202	269	285	243	110
Montana	32,680	30,467	29,957	29,584	30,813	30,921	29,225	29,761	29,768	27,072
Nebraska	5,968	5,862	6,068	6,240	6,671	6,872	6,380	6,452	6,943	7,098
Nevada	661	1,156	1,235	880	700	613	810	1,907	3,039	2,907
New Mexico	87,223	83,365	79,649	75,324	71,568	71,024	75,169	79,336	78,530	75,712
New York	824	852	855	824	841	834	831	840	1,071	853
North Dakota	23,273	24,812	30,914	40,337	45,424	47,271	50,690	52,652	50,857	45,628
Ohio	10,359	11,154	11,953	12,928	13,551	14,571	14,971	15,271	14,988	13,442
Oklahoma	156,382	150,456	143,642	150,140	154,056	158,621	158,604	168,385	162,739	149,105
Pennsylvania	2,715	2,887	2,874	2,651	3,729	4,282	4,282	4,284	4,851	3,783
South Dakota	632	869	846	765	973	1,158	1,172	1,340	1,596	1,586
Tennessee	820	593	614	743	918	1,132	1,056	920	786	644
Texas	1,137,880	1,074,050	1,018,094	977,436	945,132	925,296	902,676	904,774	888,831	839,606
Utah	33,113	31,368	27,728	24,978	25,860	22,440	29,534	34,689	40,792	39,172
Virginia	2	2	4	10	13	49	65	32	26	18
West Virginia	2,518	2,382	2,406	2,336	3,473	3,227	3,628	3,524	3,555	3,145
Wyoming	136,472	137,385	131,890	126,362	130,563	118,300	118,303	124,269	128,514	121,337
TOTAL U.S.	**3,009,265**	**3,178,216**	**3,121,310**	**3,146,365**	**3,128,624**	**3,156,715**	**3,170,999**	**3,249,696**	**3,274,553**	**3,168,252**
DAILY AVERAGE	**8,245**	**8,707**	**8,552**	**8,597**	**8,572**	**8,649**	**8,688**	**8,879**	**8,971**	**8,680**

Source: Energy Information Administration

Note: Data include lease condensate.

Natural Gas Production

(MMcf)	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Alabama	57,227	85,599	85,815	65,294	79,244	75,003	90,801	101,821	107,342	107,211
Alaska	187,889	203,088	220,754	230,588	242,564	264,364	276,691	289,129	321,346	306,468
Arizona	240	286	247	214	187	99	132	45	85	75*
Arkansas	104,096	106,792	109,452	111,808	92,986	124,611	127,561	135,161	155,099	132,470
California	311,462	311,084	248,206	309,783	380,730	383,977	415,324	476,333	491,283	469,444
Colorado	188,792	183,693	191,239	188,001	195,706	209,892	163,545	173,257	178,233	158,456
Florida	48,171	51,595	50,190	40,638	32,470	22,515	21,056	12,585	10,545	8,914
Illinois	1,003	1,159	1,585	1,574	1,295	1,162	1,030	1,530	1,324	1,500*
Indiana	183	163	350	463	330	233	135	394	367	500*
Kansas	781,289	854,484	797,762	735,035	640,114	429,597	434,736	465,979	512,872	448,334
Kentucky	60,902	70,044	59,520	57,180	61,312	51,924	46,720	61,518	73,126	75,000*
Louisiana	7,215,006	7,476,497	7,266,217	6,639,416	6,780,184	6,171,627	5,332,113	5,825,055	5,013,702	4,888,512
Maryland	82	88	28	68	56	36	31	60	39	40*
Michigan	129,954	148,047	159,731	158,302	152,593	153,051	138,910	144,537	131,855	127,008
Mississippi	82,995	106,579	144,077	175,061	181,238	167,231	151,204	157,911	144,172	142,716
Missouri	20	0	0	0	0	0	0	4	4	5*
Montana	46,819	46,522	53,888	51,867	56,565	56,517	51,967	51,474	52,494	49,491
Nebraska	2,789	2,882	3,208	2,550	2,519	2,280	2,091	2,300	1,944	2,475*
New Mexico	1,202,973	1,174,198	1,181,363	1,149,781	1,134,078	991,178	895,279	957,366	905,272	709,883
New York	10,682	13,900	15,500	15,643	16,074	15,877	17,836	25,200	31,561	35,000*
North Dakota	29,173	30,499	18,468	42,346	42,573	53,818	69,319	70,496	72,633	59,605
Ohio	99,327	114,098	123,431	138,856	141,134	138,391	151,300	186,480	182,245	185,000*
Oklahoma	1,769,519	1,773,582	1,835,366	1,891,824	2,019,199	1,934,412	1,730,061	1,985,869	1,936,341	1,917,490
Oregon	0	0	2,000	5,000	5,000	3,399	3,159	2,790	4,080	4,000*
Pennsylvania	91,717	97,763	96,313	97,439	122,454	121,111	118,372	166,342	150,234	145,880*
South Dakota	0	0	914	1,193	1,155	2,331	1,846	1,947	2,558	2,525*
Tennessee	263	468	941	1,241	1,719	2,976	3,950	5,022	4,686	5,000*
Texas	7,051,027	6,548,184	7,174,623	7,115,889	6,910,021	6,468,817	5,938,561	6,185,021	6,052,663	6,092,105
Utah	60,696	58,416	58,605	87,766	91,191	94,255	63,158	74,698	83,405	88,129
Virginia	8,220	8,492	8,544	7,812	8,903	6,880	4,346	8,901	15,041	20,000*
West Virginia	152,767	148,564	150,505	156,551	161,251	150,850	130,078	143,730	144,883	130,058
Wyoming	330,180	357,267	414,416	409,541	410,499	424,657	443,988	516,683	416,565	495,459
TOTAL U.S.	**20,025,463**	**19,974,033**	**20,473,258**	**19,888,724**	**19,965,344**	**18,523,071**	**16,825,300**	**18,229,638**	**17,197,999**	**16,808,753**

Source: Energy Information Administration

* Estimated by IPAA

Notes: Data represent marketed production.
All 1985 figures are revised.

Stripper Wells

Stripper Well Production

(thous. bbls.)	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Alabama	162	139	121	144	125	122	158	173	172	189
Arizona5	6	7	5	5	16	23	24	26	29	28
Arkansas	5,199	6,172	7,754	7,231	5,690	5,465	5,132	7,148	5,653	5,286
California	52,246	51,410	49,558	45,521	44,110	54,804	55,419	55,993	57,125	41,573
Colorado	2,013	2,017	2,018	1,955	1,989	2,159	2,204	3,630	3,330	2,682
Illinois	24,936	23,614	21,160	20,325	20,167	22,238	23,989	25,889	25,984	27,719
Indiana	4,471	5,255	4,560	4,557	4,019	4,781	4,568	4,336	4,401	4,104
Kansas	44,433	44,190	44,461	43,948	44,545	45,010	47,629	48,267	48,665	50,861
Kentucky	6,173	5,421	4,713	4,549	4,573	4,479	5,144	5,522	6,630	6,696
Louisiana	8,176	7,740	7,916	7,681	7,657	9,012	9,172	9,000	9,844	9,000
Michigan	4,602	6,233	5,602	5,621	4,717	2,449	2,820	3,145	3,228	3,272
Mississippi	1,215	1,349	1,234	1,601	1,890	3,805	2,237	1,286	1,330	1,721
Missouri	60	60	53	54	127	226	53	271	271	250
Montana	2,947	3,255	2,805	2,830	2,710	2,748	2,881	3,104	2,577	2,937
Nebraska	1,758	2,012	2,025	1,866	2,237	2,510	2,879	3,418	2,974	2,947
Nevada	0	0	0	0	0	0	9	0	0	0
New Mexico	11,141	11,547	11,831	12,068	12,924	13,463	14,207	14,722	15,016	15,367
New York	857	813	852	855	824	849	719	774	680	601
North Dakota	1,075	1,146	1,197	1,250	1,225	1,386	1,493	1,537	1,756	1,905
Ohio	6,996	7,251	7,808	8,367	9,050	9,486	10,199	10,480	10,690	10,491
Oklahoma	73,459	74,400	74,175	76,001	79,945	83,249	94,237	94,430	94,046	91,842
Pennsylvania	2,950	2,659	2,565	2,817	2,651	3,606	3,718	3,951	4,242	4,257
South Dakota	21	15	17	22	25	39	55	44	82	65
Tennessee	140	194	270	388	293	291	N/A	584	510	451
Texas	129,700	127,886	131,211	136,590	141,825	145,940	143,929	153,689	152,720	158,738
Utah	262	136	135	180	220	377	N/A	543	1,089	1,550
Virginia	3	2	2	4	10	13	49	22	27	21
West Virginia	2,400	2,384	2,255	2,382	2,313	2,607	2,683	3,116	3,270	3,346
Wyoming	4,791	5,225	5,333	5,597	5,211	5,367	6,355	6,944	7,119	7,983
TOTAL U.S.	**392,191**	**392,532**	**391,633**	**394,405**	**401,095**	**426,502**	**441,951**	**462,013**	**463,459**	**455,882**

Sources: Interstate Oil Compact Commission and the National Stripper Well Association

Notes: 1986 data are unavailable.
Totals may not add due to rounding.

Producing Stripper Wells

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Alabama	71	78	69	78	68	73	92	95	98	100
Arizona	7	7	7	8	10	12	14	17	14	14
Arkansas	6,025	6,736	6,822	6,767	6,820	5,847	5,167	7,218	4,738	4,942
California	29,983	28,328	24,198	25,957	25,400	26,566	26,354	26,358	26,650	29,230
Colorado	942	990	1,016	1,074	1,143	1,255	1,354	1,861	1,690	1,798
Illinois	23,275	23,499	23,622	23,860	24,501	25,472	26,813	28,566	29,942	30,593
Indiana	4,853	5,056	5,038	5,092	5,022	5,874	5,353	5,854	6,134	5,457
Kansas	41,764	42,273	43,154	44,686	41,876	42,924	44,521	47,592	45,749	48,235
Kentucky	13,817	14,046	13,953	14,028	14,075	14,130	14,275	17,000	16,433	17,674
Louisiana	13,185	13,189	13,600	12,131	15,889	15,950	12,010	16,500	16,500	16,000
Michigan	3,260	3,276	3,331	3,405	3,325	3,057	3,361	3,367	3,500	3,475
Mississippi	617	654	657	813	1,523	2,138	1,923	837	837	811
Missouri	173	161	144	157	301	440	530	548	548	429
Montana	1,918	1,945	1,983	1,996	2,082	2,058	2,243	2,673	3,085	3,376
Nebraska	812	919	987	1,037	1,223	1,414	1,585	1,672	1,707	1,716
Nevada	0	0	0	0	0	4	0	0	0	0
New Mexico	10,544	10,956	11,401	11,829	12,519	13,226	13,882	14,280	14,749	15,199
New York	4,916	4,913	4,700	5,000	5,220	5,345	5,259	4,228	4,532	4,448
North Dakota	655	687	741	782	878	836	959	922	1,016	1,091
Ohio	15,586	16,122	17,006	18,222	19,650	21,982	22,966	24,263	25,129	26,412
Oklahoma	53,357	56,239	59,971	64,893	66,128	69,781	73,328	77,729	82,431	83,034
Pennsylvania	31,274	28,400	27,768	27,925	25,991	25,285	23,438	21,831	19,540	11,877
South Dakota	10	16	11	10	12	23	33	33	30	24
Tennessee	159	213	265	318	387	398	N/A	716	689	952
Texas	91,498	92,887	96,713	98,487	103,594	107,596	111,671	117,178	126,202	130,311
Utah	77	74	95	106	125	196	N/A	217	348	519
Virginia	7	4	5	7	8	12	20	26	32	30
West Virginia	13,800	13,875	13,925	14,000	14,150	14,300	14,550	14,900	15,200	15,500
Wyoming	3,148	3,387	3,453	3,642	3,252	3,349	4,792	5,020	5,020	5,200
TOTAL U.S.	**365,733**	**368,930**	**374,635**	**386,310**	**395,176**	**409,539**	**416,493**	**441,501**	**452,543**	**458,447**

Sources: Interstate Oil Compact Commission and the National Stripper Well Association

Notes: 1986 data are unavailable.
Figures quoted as of December 31st each year.

Hourly Wages

($/hr.)	Oil & Gas Industry	All Mfg. Industry
1950	1.72	1.44
1951	1.85	1.56
1952	1.98	1.65
1953	2.10	1.74
1954	2.15	1.78
1955	2.20	1.86
1956	2.35	1.95
1957	2.47	2.05
1958	2.54	2.11
1959	2.65	2.19
1960	2.69	2.26
1961	2.80	2.32
1962	2.83	2.39
1963	2.92	2.46
1964	2.95	2.53
1965	3.03	2.61
1966	3.13	2.72
1967	3.25	2.83
1968	3.39	3.01
1969	3.60	3.19
1970	3.83	3.36
1971	4.15	3.56
1972	4.52	3.82
1973	4.79	4.09
1974	5.30	4.42
1975	6.01	4.83
1976	6.61	5.22
1977	7.16	5.68
1978	8.05	6.17
1979	8.78	6.70
1980	9.70	7.27
1981	10.78	7.99
1982	11.81	8.50
1983	12.38	8.84
1984	12.77	9.18
1985	13.31	9.52
1986	13.75	9.72

Source: Bureau of Labor Statistics

GAS COMPRESSORS
ARIEL CORPORATION
ARIEL
713/491-4914 • FAX 713/491-8105 • TELEX 79-0043
10-1200 BHP

Peak Year Milestones

Seismic Crew Months Worked	1952	7,958	
Rotary Rigs Active	1981	3,970	
Newfield Wildcat Wells Drilled	1981	8,052	
Exploratory Wells Drilled	1981	17,430	
Oil Wells Drilled	1981	42,520	
Gas Wells Drilled	1981	19,742	
Dry Holes Drilled	1981	26,972	
Total Wells Drilled	1981	91,600	
Total Footage Drilled	1981	412,310	thous. ft.
Crude Oil Production	1970	9,637	thous. b/d
Stripper Well Production	1961	1,622	thous. b/d
Petroleum Imports	1977	8,787	thous. b/d
Petroleum Demand	1978	19,209	thous. b/d
Natural Gas Production	1973	22,648	Bcf
Natural Gas Imports	1979	1,253	Bcf

Financial Statistics

	Rates of Return		Exploration and Development Outlays		
	Oil & Gas Companies	All Mfg. Companies	Larger Companies	Inde-pendents	Total Industry
	(%)		(mill. $)		
1960	8.8	9.2	2,412	1,788	4,200
1961	8.7	8.9	2,417	1,583	4,000
1962	8.8	9.8	2,848	1,577	4,425
1963	9.8	10.3	2,452	1,673	4,125
1964	10.1	11.6	2,817	1,633	4,450
1965	11.3	13.0	2,847	1,363	4,210
1966	12.3	13.4	2,990	1,260	4,250
1967	12.6	11.7	3,212	1,153	4,365
1968	12.2	12.1	4,087	1,303	5,390
1969	10.9	11.5	3,768	1,482	5,250
1970	9.9	9.3	3,119	1,656	4,775
1971	9.3	9.7	2,740	1,160	3,900
1972	9.6	10.6	4,225	2,255	6,480
1973	10.5	13.0	5,275	2,865	8,140
1974	14.6	14.9	8,550	3,805	12,355
1975	12.9	11.6	6,830	3,420	10,250
1976	15.2	13.9	8,646	5,864	14,510
1977	14.2	14.2	10,305	6,195	16,500
1978	13.8	15.0	11,275	8,025	19,300
1979	18.2	16.5	15,000	11,750	26,750
1980	18.1	14.1	20,553	15,647	36,200
1981	16.4	14.0	29,765	26,710	56,475
1982	12.8	9.2	30,000	25,400	55,400
1983	10.9	10.5	22,650	18,225	40,875
1984	8.7	12.5	22,050	19,400	41,450
1985	6.5	10.0	17,000*	16,000*	33,000*
1986	5.4	9.6	8,000*	7,000*	15,000*

Sources: Chase Manhattan Bank, Federal Trade Commission, and Department of Commerce

* Estimated by IPAA

Crude Oil Production By Chase Group

(thous. b/d)	Chase Group	All Other	Total Industry
1955	4,173	2,634	6,807
1956	4,406	2,745	7,151
1957	4,487	2,683	7,170
1958	4,141	2,569	6,710
1959	4,379	2,675	7,054
1960	4,423	2,612	7,035
1961	4,510	2,673	7,183
1962	4,706	2,626	7,332
1963	4,905	2,637	7,542
1964	5,017	2,597	7,614
1965	5,269	2,535	7,804
1966	5,628	2,667	8,295
1967	6,070	2,740	8,810
1968	6,312	2,784	9,096
1969	6,418	2,820	9,238
1970	6,814	2,823	9,637
1971	6,747	2,716	9,463
1972	6,730	2,711	9,441
1973	6,570	2,638	9,208
1974	6,173	2,601	8,774
1975	5,891	2,484	8,375
1976	5,587	2,545	8,132
1977	5,668	2,577	8,245
1978	6,193	2,514	8,707
1979	5,944	2,608	8,552
1980	6,071	2,526	8,597
1981	5,932	2,640	8,572
1982	5,964	2,685	8,649
1983	5,890*	2,798*	8,688
1984	5,870*	3,009*	8,879
1985	5,850*	3,121*	8,971
1986	5,750*	2,930*	8,680
Excluding Alaska North Slope			
1977	5,358	2,576	7,934
1978	5,103	2,514	7,617
1979	4,661	2,608	7,269
1980	4,554	2,526	7,080
1981	4,408	2,640	7,048
1982	4,343	2,685	7,028
1983	4,244*	2,798*	7,042
1984	4,208*	3,009*	7,217
1985	4,071*	3,121*	7,192
1986	3,932*	2,930*	6,862

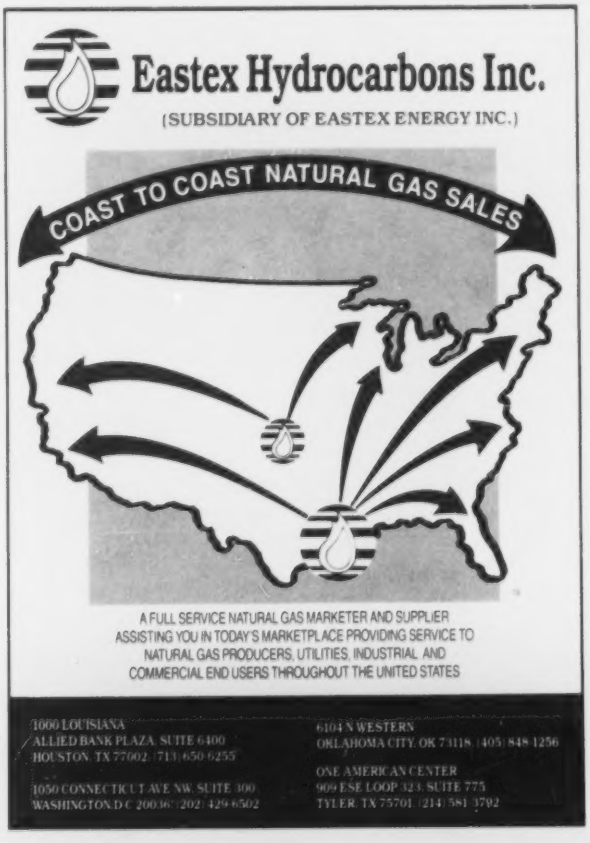
Source: Chase Manhattan Bank

* Estimated by IPAA

Refiner Acquisition Cost of Crude Oil

($/bbl.)	Domestic	Imported	Composite
1968	3.21	2.90	3.17
1969	3.37	2.80	3.29
1970	3.46	2.96	3.40
1971	3.68	3.17	3.60
1972	3.67	3.22	3.58
1973	4.17	4.08	4.15
1974	7.18	12.52	9.07
1975	8.39	13.93	10.38
1976	8.84	13.48	10.89
1977	9.55	14.53	11.96
1978	10.61	14.57	12.46
1979	14.27	21.67	17.72
1980	24.23	33.89	28.07
1981	34.33	37.05	35.24
1982	31.22	33.55	31.87
1983	28.87	29.30	28.99
1984	28.53	28.88	28.63
1985	26.66	26.99	26.75
1986	14.83	13.98	14.55

Source: Energy Information Administration


Eastex Hydrocarbons Inc.
(SUBSIDIARY OF EASTEX ENERGY INC.)
COAST TO COAST NATURAL GAS SALES
A FULL SERVICE NATURAL GAS MARKETER AND SUPPLIER
ASSISTING YOU IN TODAY'S MARKETPLACE PROVIDING SERVICE TO
NATURAL GAS PRODUCERS, UTILITIES, INDUSTRIAL AND
COMMERCIAL END USERS THROUGHOUT THE UNITED STATES
1000 LOUISIANA
ALLIED BANK PLAZA, SUITE 6400
HOUSTON, TX 77002 (713) 650-6255
6104 N WESTERN
OKLAHOMA CITY, OK 73118 (405) 848-1256
1050 CONNECTICUT AVE NW, SUITE 300
WASHINGTON, D C 20036 (202) 429-6502
ONE AMERICAN CENTER
909 ESE LOOP 323, SUITE 775
TYLER, TX 75701 (214) 581-3792

Prices

Crude Oil Wellhead Prices

($/bbl.)	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Alabama	9.67	10.52	11.97	20.57	35.80	32.32	30.07	29.39	25.77	13.91
Alaska	6.14	5.23	10.25	16.52	23.60	20.08	17.92	18.13	17.12	6.71
Arizona	5.25	5.92	8.29	12.30	24.00*	31.00*	30.00*	28.00*	27.00*	15.15*
Arkansas	9.93	10.63	14.72	24.17	33.69	30.12	28.28	28.15	25.79	14.52
California	7.31	8.58	12.78	23.87	26.80	24.58	22.61	22.09	22.14	11.90
Colorado	10.10	10.84	13.28	22.91	35.69	31.56	28.92	28.09	25.64	13.99
Florida	11.67	12.00	13.07	18.84	25.00*	32.00*	31.10*	31.00*	29.00	23.13
Illinois	12.27	13.81	23.49	35.78	36.03	31.69	29.12	28.76	26.90	14.70
Indiana	12.46	13.70	23.28	35.91	36.07	31.66	29.06	28.72	26.82	14.55
Kansas	10.00	13.20	21.57	34.20	35.80	30.79	28.45	27.99	25.33	14.02
Kentucky	13.02	13.73	22.55	34.98	35.90	31.19	28.60	28.24	26.20	14.20
Louisiana	8.33	9.03	11.42	19.87	35.45	32.44	30.02	29.67	27.22	15.32
Michigan	11.00	11.86	14.47	23.54	35.74	31.80	28.93	28.54	26.16	14.61
Mississippi	8.20	7.91	10.74	20.85	30.47	29.04	26.76	27.26	25.51	13.64
Missouri	12.50*	12.25*	25.68*	37.75*	34.38*	31.25*	31.20*	27.50*	25.00*	15.25*
Montana	8.58	9.04	12.03	20.53	34.69	31.25	28.80	28.07	25.29	13.60
Nebraska	10.46	11.40	18.13	30.60	35.32	30.98	28.58	27.83	25.42	13.70
Nevada	11.50*	12.00*	11.54*	16.65*	23.96*	23.95*	23.80*	25.80*	26.00*	12.00*
New Mexico	9.23	10.17	14.33	24.06	35.04	31.82	29.26	28.69	26.84	14.93
New York	14.20	14.74	23.78	37.39	34.15	30.91	28.19	27.70	25.19	16.03
North Dakota	8.00	9.75	13.64	26.42	35.63	31.89	29.27	28.39	25.32	13.54
Ohio	13.16	13.80	22.79	36.64	36.11	30.90	28.14	27.71	25.11	15.51
Oklahoma	9.98	11.30	17.53	29.25	35.43	32.04	29.67	29.11	26.28	14.47
Pennsylvania	14.29	14.72	24.13	37.46	36.03	30.77	28.28	27.71	25.05	15.77
South Dakota	12.00	12.16	15.35	28.81	35.55	31.63	29.10	28.36	25.79	13.81
Tennessee	13.75	12.70	20.26	34.29	33.00*	32.10*	32.00*	29.00*	26.00*	15.00*
Texas	8.78	9.29	12.65	21.84	35.06	31.77	29.35	28.87	26.80	14.74
Utah	9.33	9.98	11.41	19.79	34.14	30.50	28.12	27.21	23.98	13.30
Virginia	12.50*	12.50*	24.80*	37.21*	36.25*	32.35*	32.25*	27.28*	24.75*	15.00*
West Virginia	13.97	14.48	23.35	36.92	35.63	29.98	27.27	26.90	24.35	14.68
Wyoming	7.62	9.16	11.73	21.34	32.30	29.37	27.19	26.73	24.67	12.94
TOTAL U.S.	**8.57**	**9.00**	**12.64**	**21.59**	**31.77**	**28.52**	**26.19**	**25.88**	**24.09**	**12.66**

Source: Energy Information Administration

* Estimated by IPAA

Note: Data represent the average first purchase prices of crude oil at the lease or wellhead.

Natural Gas Wellhead Prices

($/Mcf)	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Alabama	1.47	1.50	2.04	3.19	4.77	3.44	4.28	3.73	3.71	2.15
Alaska	.40	.52	.52	.73	.62	.63	.73	.73	.74	.50
Arizona	33	.37	.41	1.15	1.85	2.59	3.08	2.90	2.80*	2.10
Arkansas	.58	.75	.96	.70	1.81	2.13	2.29	2.54	2.55	1.91
California	1.17	1.36	1.70	3.13	2.57	3.09	3.57	3.80	3.36	2.13
Colorado	.81	.84	1.41	1.47	1.97	3.17	3.38	3.43	2.90	2.05
Florida	1.09	1.39	1.57	1.73	2.71	2.46	2.33	2.57	2.43	1.77
Illinois	1.20	1.29	1.86	1.90	2.47	2.62	2.84	2.78	2.77	2.43
Indiana	.69	.71	1.05	1.35	2.08	1.55	2.09	3.38	2.51	1.23
Kansas	.48	.57	.76	.77	.92	1.51	1.57	1.49	1.27	1.15
Kentucky	.55	.58	.95	.89	1.01	1.52	1.51	1.70	2.39	1.88
Louisiana	.70	.84	1.11	1.61	2.07	2.60	2.67	2.73	2.66	2.17
Maryland	.39	.61	1.04	.46	.48	.78	.55	.55	.59	.58
Michigan	1.01	1.20	1.74	2.35	2.86	3.19	3.58	3.76	3.60	2.40
Mississippi	.73	1.15	1.60	2.32	3.21	3.91	3.78	3.47	3.17	2.13
Missouri	.40*	.60*	1.35*	2.00*	2.50*	3.00*	3.45*	3.75	3.50	3.75
Montana	.72	.85	1.21	1.45	1.91	2.15	2.41	2.46	2.39	2.05
Nebraska	.65	.68	.85	.83	1.45	1.99	2.93	2.24	3.01	2.82
New Mexico	.81	.99	1.37	1.76	2.13	2.47	2.68	2.71	2.62	1.91
New York	1.16	1.19	1.27	1.95	2.67	3.75	3.85	4.00	3.37	2.60
North Dakota	.35	.46	1.28	1.19	1.94	2.30	2.27	2.26	1.90	1.35
Ohio	1.40	1.57	1.81	1.98	2.17	2.71	3.24	3.19	3.08	2.84
Oklahoma	.79	.90	1.12	1.51	1.88	2.74	2.83	2.72	2.47	1.69
Oregon	1.25*	1.50*	2.00	2.40	2.60	3.33	3.33	2.78	2.40	2.04
Pennsylvania	.80	.86	1.33	2.13	2.33	2.80	3.00	3.25	3.16	2.50
South Dakota	1.20*	1.35*	2.11	2.45	2.75	3.08	3.37	3.67	2.51	2.46
Tennessee	.74	1.64	1.70	1.76	2.55	3.00	2.50	3.50	2.48	1.78
Texas	.90	.99	1.23	1.56	1.87	2.17	2.36	2.45	2.33	1.60
Utah	.61	.64	.72	1.12	1.10	3.06	3.40	4.08	3.52	2.67
Virginia	1.26	1.31	1.68	2.85	2.15	3.69	3.30	3.00	3.02	2.45
West Virginia	.61	.66	1.05	3.00	3.00	3.20	3.10	3.45	3.85	3.90
Wyoming	.64	.79	1.13	1.92	2.77	3.22	3.18	3.32	3.01	2.52
TOTAL U.S.	**.79**	**.91**	**1.18**	**1.60**	**1.98**	**2.46**	**2.59**	**2.66**	**2.51**	**1.87**

Source: Energy Information Administration

Note: All 1986 prices are estimated by IPAA.

* Estimated by IPAA

Wholesale Prices—Total U.S.

	Motor Gasoline	Kerosene	Distillate Fuel Oil	Residual Fuel Oil	Average of Four Products		Crude Oil
	(¢/gal.)				(¢/gal.)	($/bbl.)	($/bbl.)
1935	5.42	4.10	3.26	1.74	3.93	1.65	0.97
1936	6.32	3.94	3.39	1.81	4.41	1.85	1.09
1937	6.68	4.81	3.96	2.08	4.80	2.02	1.17
1938	5.97	4.57	3.62	1.55	4.22	1.77	1.14
1939	5.79	4.16	3.34	1.50	4.06	1.71	1.04
1940	5.26	4.36	3.55	1.74	3.91	1.64	1.02
1941	6.05	4.40	3.67	2.05	4.41	1.85	1.14
1942	6.14	4.56	3.91	2.18	4.54	1.91	1.20
1943	6.32	4.72	4.09	2.34	4.71	1.98	1.20
1944	6.47	4.78	4.34	2.49	4.87	2.05	1.20
1945	6.48	5.18	5.33	2.60	4.93	2.07	1.20
1946	6.60	5.70	5.06	3.05	5.26	2.21	1.39
1947	8.57	7.28	6.51	4.31	6.92	2.91	1.93
1948	10.53	9.92	8.94	5.72	8.81	3.70	2.60
1949	10.71	9.11	7.72	3.31	7.96	3.34	2.54
1950	10.86	9.39	7.97	3.98	8.29	3.48	2.51
1951	11.40	9.85	8.50	4.42	8.79	3.69	2.53
1952	11.38	9.90	8.52	3.84	8.62	3.62	2.53
1953	12.01	10.23	8.83	3.73	8.96	3.76	2.68
1954	11.66	10.40	8.94	3.97	8.88	3.73	2.78
1955	11.62	10.53	9.08	4.53	9.06	3.81	2.77
1956	11.75	10.99	9.45	5.30	9.43	3.96	2.79
1957	12.34	11.54	10.05	6.15	10.10	4.24	3.09
1958	11.74	10.96	9.39	4.82	9.27	3.89	3.01
1959	11.64	11.26	9.31	4.79	9.22	3.87	2.90
1960	11.61	11.17	8.79	4.88	9.15	3.84	2.88
1961	11.62	11.49	9.10	4.85	9.21	3.87	2.89
1962	11.52	11.42	9.11	4.78	9.13	3.84	2.90
1963	11.35	11.51	9.18	4.61	9.01	3.79	2.89
1964	11.27	10.93	8.65	4.50	8.83	3.71	2.88
1965	11.52	11.28	9.04	4.81	9.12	3.83	2.86
1966	11.59	11.49	9.09	4.73	9.15	3.84	2.88
1967	11.84	11.96	9.71	4.53	9.33	3.92	2.92
1968	11.55	12.03	9.84	4.30	9.14	3.84	2.94
1969	11.80	11.98	10.06	4.20	9.27	3.89	3.09
1970	12.33	12.43	10.45	6.14	10.20	4.28	3.18
1971	12.70	12.90	10.75	7.76	10.94	4.59	3.39
1972	12.70	12.87	10.61	7.60	10.87	4.57	3.39
1973	14.72	14.08	12.61	8.45	12.49	5.25	3.89
1974	25.53	24.02	22.57	20.43	23.48	9.86	6.87
1975	30.27	27.41	26.09	22.03	27.03	11.35	7.67
1976	33.82	31.67	30.38	21.66	29.55	12.41	8.19
1977	36.99	35.81	34.41	25.87	33.21	13.95	8.57
1978	39.22	37.23	35.66	23.00	33.72	14.16	9.00
1979	56.84	56.60	54.47	33.63	49.50	20.79	12.64
1980	87.40	80.26	78.21	44.43	72.77	30.56	21.59
1981	101.63	101.03	97.20	61.17	88.75	37.28	31.77
1982	94.56	97.18	91.95	57.80	83.27	34.97	28.52
1983	86.97	85.12	80.05	57.30	76.94	32.32	26.19
1984	81.14	84.75	79.62	59.14	74.49	31.29	25.88
1985	81.11	81.69	76.66	56.41	73.06	30.69	24.09
1986	47.74	49.92	44.91	36.23	43.97	18.47	12.66

Sources: Product prices from IPAA, based on low quotes from *Platt's Oilgram Price Report*. Crude oil wellhead prices from Energy Information Administration.

Notes: Data reflect price trends only, not actual sale prices. Motor gasoline prices represent leaded fuel prior to 1982, and unleaded thereafter.

Wholesale Prices—East of California

	Motor Gasoline	Kerosene	Distillate Fuel Oil	Residual Fuel Oil	Average of Four Products		Crude Oil
	(¢/gal.)				(¢/gal.)	($/bbl.)	($/bbl.)
1935	5.45	4.12	3.37	1.79	3.97	1.67	1.00
1936	6.12	4.01	3.52	1.86	4.35	1.83	1.11
1937	6.23	4.76	4.07	2.19	4.62	1.94	1.21
1938	5.45	4.39	3.78	1.62	4.00	1.68	1.17
1939	5.29	3.99	3.55	1.57	3.85	1.62	1.04
1940	4.96	4.33	3.80	1.90	3.84	1.61	1.04
1941	5.97	4.38	3.90	2.19	4.45	1.87	1.17
1942	6.28	4.57	4.17	2.26	4.67	1.96	1.23
1943	6.41	4.69	4.19	2.31	4.76	2.00	1.23
1944	6.42	4.73	4.17	2.46	4.81	2.02	1.23
1945	6.36	4.72	4.16	2.59	4.81	2.02	1.23
1946	6.40	5.38	4.84	3.08	5.12	2.15	1.43
1947	8.45	7.14	6.44	4.48	6.89	2.89	1.97
1948	10.21	9.62	8.94	5.90	8.70	3.65	2.63
1949	10.39	8.36	7.34	3.10	7.64	3.21	2.60
1950	10.77	8.76	7.79	4.10	8.22	3.45	2.59
1951	11.26	9.31	8.43	4.47	8.70	3.65	2.58
1952	11.25	9.38	8.40	3.76	8.48	3.56	2.58
1953	11.79	9.40	8.45	3.59	8.71	3.66	2.71
1954	11.43	9.55	8.71	3.92	8.68	3.64	2.82
1955	11.42	9.76	9.02	4.66	8.95	3.76	2.81
1956	11.55	10.26	9.48	5.34	9.31	3.91	2.82
1957	12.06	10.64	9.95	6.03	9.86	4.14	3.09
1958	11.61	9.87	9.12	4.56	9.03	3.79	3.03
1959	11.57	10.14	9.36	4.70	9.11	3.83	2.95
1960	11.69	10.01	8.93	4.86	9.14	3.84	2.94
1961	11.72	10.41	9.31	4.82	9.22	3.87	2.95
1962	11.55	10.34	9.27	4.67	9.08	3.82	2.96
1963	11.33	10.44	9.32	4.57	8.96	3.76	2.95
1964	11.29	9.71	8.62	4.56	8.79	3.69	2.93
1965	11.56	10.15	9.00	4.82	9.08	3.81	2.93
1966	11.55	10.41	9.13	4.72	9.08	3.81	2.95
1967	11.76	11.00	9.74	4.55	9.26	3.89	3.00
1968	11.50	11.09	9.81	4.33	9.08	3.81	3.03
1969	11.82	11.03	9.89	4.34	9.25	3.88	3.19
1970	12.57	11.59	10.32	6.35	10.32	4.33	3.27
1971	12.81	12.18	10.66	7.55	10.88	4.57	3.48
1972	12.75	12.14	10.58	7.36	10.78	4.53	3.48
1973	14.83	13.64	12.47	8.48	12.51	5.25	3.99
1974	25.10	24.00	22.20	21.62	23.57	9.90	7.09
1975	30.23	27.61	25.98	23.06	27.31	11.47	7.91
1976	33.71	31.42	29.80	22.24	29.57	12.42	8.50
1977	36.83	36.33	34.57	25.99	33.21	13.95	8.83
1978	38.78	38.00	36.04	23.46	33.73	14.17	9.80
1979	56.29	56.51	53.96	32.63	48.85	20.52	13.20
1980	87.04	80.66	78.12	44.34	72.57	30.48	22.67
1981	101.56	102.36	98.75	61.84	89.26	34.49	34.92
1982	94.41	99.03	92.51	57.30	83.20	34.95	31.72
1983	87.64	87.03	80.77	56.36	77.19	32.42	29.34
1984	81.10	87.29	80.78	58.20	74.49	31.29	28.95
1985	80.87	82.82	76.53	54.73	72.48	30.44	26.59
1986	46.58	51.07	44.80	36.56	43.53	18.28	14.65

Sources: Product prices from IPAA, based on low quotes from *Platt's Oilgram Price Report*. Crude oil wellhead prices derived from Energy Information Administration data.

Notes: Data reflect price trends only, not actual sale prices. Motor gasoline prices represent leaded fuel prior to 1982, and unleaded thereafter.

Miscellaneous

Severance and Production Taxes

(thous. $)	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Alabama	11,529	15,502	17,310	30,019	55,757	58,036	72,486	114,302	84,215	64,863
Alaska	52,946	107,721	251,636	830,520	1,170,090	1,581,116	1,493,700	1,393,100	1,358,344	1,355,800
Arkansas	9,206	9,573	11,261	17,858	27,047	24,602	22,812	21,329	20,438	10,312
California	6,841	8,338	9,103	9,025	10,249	11,840	14,196	17,018	15,146	14,022
Colorado	6,033	6,376	7,089	9,535	18,010	35,867	23,251	20,598	18,480	18,378
Florida	26,438	42,768	49,306	57,317	95,240	79,387	50,835	28,837	21,629	17,436
Indiana	723	686	1,159	1,756	1,835	1,764	1,578	1,546	1,398	686
Kansas	50,178	55,625	61,525	95,921	104,913	118,304	182,119	243,011	241,700	170,283
Kentucky	408	395	404	876	12,544	13,737	14,283	13,461	23,735	12,507
Louisiana	485,339	466,346	458,009	513,151	803,147	971,677	859,930	803,183	731,760	653,594
Maryland	3	4	6	4	3	2	1	3	1	1
Michigan	9,829	12,416	15,454	48,936	85,554	87,867	83,188	82,556	81,704	64,766
Mississippi	24,501	27,756	34,974	69,011	108,145	113,669	99,159	96,888	82,382	49,355
Montana	31,663	35,407	37,187	35,697	54,710	100,811	119,683	134,862	132,360	116,054
Nebraska	1,241	1,318	2,018	3,655	4,776	5,969	4,325	5,128	4,455	2,717
Nevada	N/A	N/A	N/A	N/A	4	3	25	98	152	134
New Mexico	132,517	151,820	185,349	287,152	369,331	348,437	347,548	381,537	365,029	234,000
North Dakota	9,604	11,100	15,094	53,593	91,210	126,138	166,700	160,436	136,200	81,775
Ohio	1,146	1,246	1,431	1,579	1,731	1,333	1,856	4,396	5,752	6,045
Oklahoma	193,614	233,100	283,791	437,306	601,846	744,629	778,169	709,917	709,364	571,965
Oregon	0	0	0	0	0	427	416	318	429	253
South Dakota	68	71	456	764	1,270	1,707	1,707	1,557	1,824	1,821
Tennessee	28	32	116	378	530	931	1,398	1,201	980	476
Texas	902,801	955,051	1,026,169	1,527,867	2,204,602	2,373,846	2,251,314	2,215,647	2,163,018	1,547,926
Utah	6,441	6,643	6,978	10,584	16,041	22,296	26,021	38,443	49,354	46,110
West Virginia	7,951	9,722	12,002	21,852	28,591	37,609	36,590	44,125	50,777	55,331
Wyoming	41,457	48,179	53,392	67,302	260,698	270,372	255,798	270,180	244,316	137,999
TOTAL U.S.	**2,012,505**	**2,207,195**	**2,541,219**	**4,131,658**	**6,127,874**	**7,132,376**	**6,909,088**	**6,803,677**	**6,544,942**	**5,234,609**

Source: Various state and industry contacts

Notes: Data include state and local taxes.
States vary on the use of fiscal or calendar year data.

Product Consumption—1986

(thous. bbls.)	Motor Gasoline	Aviation Fuels	Middle Distillates	Residual Fuel Oil	Asphalt	Propane	All Other	Total Products
Alabama	43,423	2,974	18,023	2,099	3,739	2,803	9,551	82,612
Alaska	6,391	14,198	8,339	2,738	400	442	4,249	36,757
Arizona	38,437	4,282	8,894	1,089	2,714	943	7,367	63,726
Arkansas	26,645	589	11,456	482	1,053	3,004	5,651	48,880
California	307,521	59,832	81,582	56,330	16,487	11,804	69,746	603,302
Colorado	40,415	7,488	10,589	714	3,315	2,866	8,547	73,934
Connecticut	29,414	1,164	13,690	23,906	2,278	1,210	9,368	81,030
Delaware	9,177	115	7,172	1,115	653	109	2,398	20,739
Dist.of Columbia	3,482	337	3,245	844	22	60	1,044	9,034
Florida	129,989	19,101	30,689	38,299	8,837	7,194	30,603	264,712
Georgia	75,062	15,451	22,002	3,321	6,049	4,921	16,576	143,382
Hawaii	8,125	7,585	2,918	14,269	292	345	4,384	37,918
Idaho	10,677	412	5,052	2,190	583	475	2,535	21,924
Illinois	93,336	1,568	29,489	2,020	6,633	6,284	18,213	157,543
Indiana	59,374	17,430	29,037	2,191	6,503	4,700	15,586	134,821
Iowa	34,432	589	16,799	2,292	2,185	6,358	8,190	70,845
Kansas	55,623	6,351	30,452	1,595	2,849	33,057	16,984	146,911
Kentucky	41,993	3,121	19,022	519	2,451	3,271	9,200	79,577
Louisiana	62,470	16,393	44,829	29,956	1,921	11,385	21,824	188,778
Maine	12,485	533	7,438	7,490	787	574	3,831	33,138
Maryland	44,522	2,540	18,362	7,802	5,600	1,354	10,481	90,661
Massachusetts	54,027	6,489	40,468	35,188	1,195	1,536	18,157	157,060
Michigan	99,100	5,441	25,624	1,834	3,629	9,304	18,946	163,878
Minnesota	53,481	7,355	22,247	1,498	5,878	6,090	12,621	109,170
Mississippi	34,752	3,600	19,921	276	2,042	9,039	9,102	78,732
Missouri	60,041	6,248	17,948	376	4,690	4,213	12,260	106,046
Montana	11,301	1,041	6,189	56	2,133	1,388	2,890	24,998
Nebraska	17,525	556	11,919	1,061	1,023	2,641	4,539	39,264
Nevada	14,164	3,588	5,892	475	608	693	3,323	28,743
New Hampshire	6,235	132	6,875	2,910	593	953	2,313	20,011
New Jersey	117,614	37,025	81,346	33,345	5,968	2,808	36,354	314,460
New Mexico	18,274	1,005	8,358	544	1,733	5,032	4,568	39,514
New York	118,974	2,449	64,259	56,077	6,905	5,649	33,244	287,557
North Carolina	74,770	4,843	28,705	6,446	4,861	5,729	16,386	141,740
North Dakota	9,152	256	7,893	945	941	2,923	2,890	25,000
Ohio	110,739	8,964	39,899	2,322	7,873	4,238	22,750	196,785
Oklahoma	48,808	3,558	18,269	1,087	3,519	5,959	10,614	91,814
Oregon	30,377	2,344	15,784	2,917	2,386	1,350	7,210	62,368
Pennsylvania	113,535	9,091	57,521	29,135	6,388	5,043	28,852	249,565
Rhode Island	10,799	461	8,132	3,264	1,586	342	3,214	27,798
South Carolina	36,277	816	11,914	2,577	2,218	2,771	7,395	63,968
South Dakota	8,881	264	5,537	652	874	1,383	2,299	19,890
Tennessee	64,586	5,468	27,092	725	4,459	2,434	13,695	118,459
Texas	317,041	77,699	142,024	37,371	14,634	67,144	85,741	741,654
Utah	18,735	3,316	7,066	632	1,389	1,088	4,213	36,439
Vermont	2,481	258	2,582	358	449	578	877	7,583
Virginia	65,933	9,806	30,139	8,299	4,766	2,806	15,915	137,664
Washington	50,284	14,336	28,613	10,956	2,578	2,081	14,229	123,077
West Virginia	14,327	186	6,288	1,111	606	350	2,989	25,857
Wisconsin	48,111	1,334	21,215	211	2,204	5,293	10,244	88,612
Wyoming	7,022	138	7,594	353	1,721	4,726	2,818	24,372
TOTAL U.S.	**2,770,338**	**400,122**	**1,196,390**	**444,256**	**175,472**	**268,980**	**687,007**	**5,942,565**

Sources: Energy Information Administration (preliminary data) and The Asphalt Institute

Notes: Middle distillates include kerosene. All other includes naphtha, lubricants, waxes, petroleum coke and still gas.

Industry Employment—1986

	MINING	REFINING		TRANSPORTATION		WHOLESALE	RETAIL	TOTAL
	Oil and Gas Extraction	Petroleum Refining	Oils and Greases	Pipelines, Except Gas	Gas Distribution	Petroleum Products	Gasoline Stations	INDUSTRY
Alabama	1,419	381	64	92	2,986	5,119	7,544	17,605
Alaska	8,457	255	0	902	297	503	1,170	11,584
Arizona	108	N/A	0	112	1,835	1,506	8,481	12,042
Arkansas	2,758	627	0	N/A	2,194	2,797	4,984	13,360
California	32,842	25,115	724	1,153	11,491	17,049	62,588	150,962
Colorado	20,078	566	43	105	2,221	2,633	8,060	33,706
Connecticut	161	N/A	90	N/A	1,300	1,568	9,564	12,683
Delaware	9	641	9	0	293	365	1,368	2,685
Dist. of Columbia	66	89	0	0	639	163	981	1,938
Florida	780	73	181	56	2,101	7,024	29,495	39,710
Georgia	89	115	135	468	4,064	5,663	17,332	27,866
Hawaii	N/A	415	0	0	335	577	3,623	4,950
Idaho	55	0	0	15	398	1,420	2,742	4,630
Illinois	5,119	6,060	N/A	926	8,470	9,939	25,279	55,793
Indiana	681	2,535	267	417	2,982	3,355	16,713	26,950
Iowa	28	0	53	160	1,365	3,237	11,788	16,631
Kansas	10,403	2,315	406	1,743	3,098	2,604	7,752	28,321
Kentucky	2,497	3,485	83	154	3,043	2,821	10,253	22,336
Louisiana	60,900	11,500	600	1,200	6,500	5,200	8,000	93,900
Maine	8	N/A	N/A	N/A	N/A	1,498	2,777	4,283
Maryland	21	N/A	302	0	1,139	3,105	13,342	17,909
Massachusetts	765	22	368	10	4,991	2,513	15,719	24,388
Michigan	4,093	1,652	576	272	7,083	5,551	22,042	41,269
Minnesota	N/A	N/A	N/A	190	2,349	2,649	15,969	21,157
Mississippi	6,112	1,567	108	N/A	2,074	2,697	5,347	17,905
Missouri	108	40	369	229	4,919	5,783	17,985	29,433
Montana	2,314	855	2	97	286	1,347	3,031	7,932
Nebraska	741	16	118	112	2,902	1,962	6,548	12,399
Nevada	247	58	0	19	669	423	3,611	5,027
New Hampshire	1	0	4	3	263	432	2,779	3,482
New Jersey	131	6,571	1,086	164	2,182	3,634	19,365	33,133
New Mexico	9,935	868	36	234	3,368	2,012	3,880	20,333
New York	2,152	6,783	414	125	6,410	9,081	28,280	53,245
North Carolina	14	N/A	212	116	2,588	5,702	10,780	19,412
North Dakota	3,126	230	154	158	1,068	2,327	2,307	9,370
Ohio	7,872	5,341	725	627	7,447	6,074	29,865	57,951
Oklahoma	49,626	6,753	429	1,369	5,540	4,762	5,963	74,442
Oregon	104	N/A	52	N/A	N/A	2,529	8,334	11,019
Pennsylvania	4,500	8,300	800	700	8,600	9,300	26,300	58,500
Rhode Island	N/A	N/A	N/A	N/A	880	426	2,471	3,777
South Carolina	20	0	N/A	N/A	593	3,664	7,507	11,784
South Dakota	126	0	0	62	122	1,533	2,669	4,512
Tennessee	361	261	186	42	1,783	5,367	11,482	19,482
Texas	194,503	30,826	1,200	4,739	27,115	24,557	34,728	317,668
Utah	2,427	794	1	84	2,360	1,645	4,965	12,276
Vermont	1	0	0	0	143	364	1,954	2,462
Virginia	N/A	N/A	50	N/A	2,790	7,780	15,730	26,350
Washington	199	1,578	N/A	83	1,636	2,640	9,862	15,998
West Virginia	4,670	432	122	102	4,880	1,514	4,745	16,465
Wisconsin	N/A	N/A	85	161	2,860	5,563	15,406	24,075
Wyoming	10,991	916	2	269	1,144	1,316	2,545	17,183
TOTAL U.S.	**451,618**	**128,035**	**10,056**	**17,470**	**165,796**	**203,293**	**596,005**	**1,572,273**

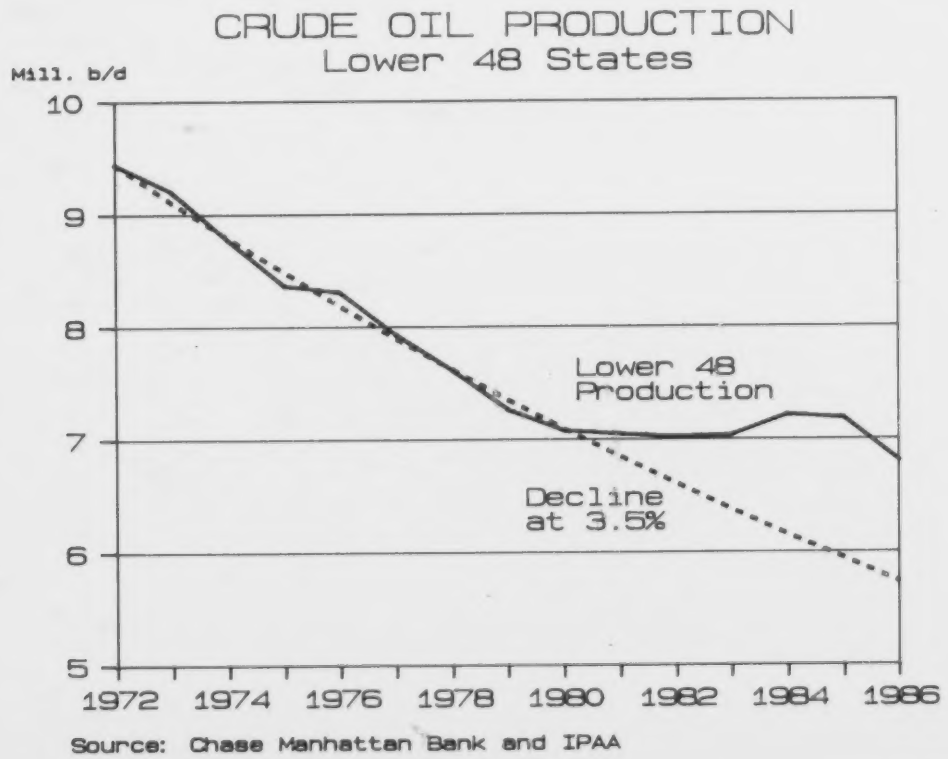
Source: Various government agencies

Note: Data differ from the Bureau of Labor Statistics national averages due to confidentiality rules.

Employment Summary

(thous.)	Oil & Gas Extraction	Total Refining	Transpor-tation	Wholesale Products	Retail Stations	TOTAL INDUSTRY	Oil & Gas Services
1965	287.1	158.0	173.1	219.1	521.9	1,359.2	130.5
1966	281.8	158.4	172.1	220.4	538.4	1,371.1	129.2
1967	275.8	158.4	174.6	221.9	565.9	1,396.6	126.2
1968	275.6	160.7	176.9	223.2	585.8	1,422.2	127.5
1969	279.9	155.5	177.4	223.8	606.4	1,443.0	134.1
1970	270.1	164.7	178.8	224.5	613.3	1,451.4	125.2
1971	264.2	164.0	175.8	225.0	619.0	1,448.0	119.4
1972	267.9	162.8	177.4	225.2	648.9	1,482.2	124.5
1973	273.9	160.3	179.5	220.8	651.4	1,485.9	134.6
1974	300.2	164.6	180.5	216.8	590.4	1,452.5	155.6
1975	328.8	164.0	179.4	227.5	622.2	1,521.9	173.5
1976	345.7	167.7	177.0	232.0	625.8	1,548.2	184.3
1977	381.4	170.7	177.3	229.7	628.7	1,587.8	211.4
1978	429.3	175.4	183.1	229.4	628.0	1,645.2	246.7
1979	474.2	177.3	187.2	225.4	576.9	1,641.0	276.0
1980	559.7	167.0	189.3	223.9	560.8	1,700.7	333.8
1981	692.1	185.1	195.8	231.5	562.2	1,866.7	430.2
1982	708.3	175.8	198.2	222.6	559.0	1,863.9	434.5
1983	597.8	169.2	193.6	210.9	556.2	1,727.7	333.2
1984	606.5	163.0	192.3	208.3	574.7	1,744.8	345.6
1985	582.9	152.4	193.5	205.9	588.5	1,723.2	329.4
1986	457.4	140.4	185.9	199.6	596.4	1,579.7	233.0

Sources: Bureau of Labor Statistics and IPAA



Statistical Summary

	PRODUCTION			IMPORTS			TOTAL SUPPLY	TOTAL DEMAND	CRUDE OIL RESERVES		CRUDE OIL PRICE
	Crude Oil	NGL	Total	Crude Oil	Refined Products	Total			Proved Reserves	New Reserves	
	(thous. b/d)								(thous. bbls.)		($/bbl.)
1947	5,087	362	5,449	267	170	437	5,993	5,938	21,487,685	2,464,570	1.93
1948	5,520	401	5,921	353	161	514	6,528	6,166	23,280,444	3,795,207	2.60
1949	5,046	430	5,476	421	224	645	6,167	6,136	24,649,489	3,187,845	2.54
1950	5,407	499	5,906	487	363	850	6,856	6,861	25,268,398	2,562,685	2.51
1951	6,158	561	6,719	491	353	844	7,620	7,487	27,468,031	4,413,954	2.53
1952	6,256	611	6,867	573	379	952	7,847	7,712	27,960,554	2,749,288	2.53
1953	6,458	654	7,112	648	386	1,034	8,176	8,010	28,944,828	3,296,130	2.68
1954	6,342	691	7,033	656	396	1,052	8,117	8,119	29,560,746	2,873,037	2.78
1955	6,807	771	7,578	782	466	1,248	8,870	8,832	30,012,170	2,870,724	2.77
1956	7,151	800	7,951	934	502	1,436	9,439	9,213	30,434,649	2,974,336	2.79
1957	7,170	808	7,978	1,022	552	1,574	9,613	9,395	30,300,405	2,424,800	3.09
1958	6,710	807	7,517	953	747	1,700	9,282	9,394	30,535,917	2,608,242	3.01
1959	7,054	879	7,933	966	814	1,780	9,799	9,737	31,719,347	3,666,745	2.90
1960	7,035	929	7,964	1,016	799	1,815	9,926	10,000	31,613,211	2,365,328	2.88
1961	7,183	991	8,174	1,045	872	1,917	10,270	10,150	31,758,505	2,657,567	2.89
1962	7,332	1,021	8,353	1,127	955	2,082	10,610	10,568	31,389,223	2,180,896	2.90
1963	7,542	1,098	8,640	1,131	992	2,123	10,965	10,951	30,969,990	2,174,110	2.89
1964	7,614	1,155	8,769	1,198	1,060	2,258	11,244	11,225	30,990,510	2,664,767	2.88
1965	7,804	1,210	9,014	1,239	1,229	2,468	11,702	11,700	31,352,391	3,048,079	2.86
1966	8,295	1,284	9,579	1,225	1,348	2,573	12,396	12,283	31,452,127	2,963,978	2.88
1967	8,810	1,409	10,219	1,128	1,409	2,537	13,049	12,867	31,376,670	2,962,122	2.92
1968	9,096	1,504	10,600	1,291	1,549	2,840	13,787	13,624	30,707,117	2,454,635	2.94
1969	9,238	1,590	10,828	1,409	1,757	3,166	14,333	14,370	29,631,862	2,120,036	3.09
1970	9,637	1,660	11,297	1,324	2,095	3,419	15,071	14,956	39,001,335	2,688,918	3.18
1971	9,463	1,694	11,157	1,680	2,245	3,925	15,520	15,437	38,062,957	2,317,732	3.39
1972	9,441	1,744	11,185	2,216	2,525	4,741	16,357	16,589	36,339,408	1,557,848	3.39
1973	9,208	1,738	10,946	3,244	3,012	6,256	17,674	17,539	35,299,839	2,145,831	3.89
1974	8,774	1,688	10,462	3,477	2,635	6,112	17,052	16,873	34,249,956	1,993,573	6.87
1975	8,375	1,632	10,007	4,105	1,951	6,056	16,694	16,531	32,682,127	1,318,463	7.67
1976	8,132	1,604	9,736	5,287	2,026	7,313	17,626	17,684	30,942,166	1,085,291	8.19
1977	8,245	1,618	9,863	6,594	2,193	8,787	19,202	18,674	31,780,000	1,140,000	8.57
1978	8,707	1,567	10,274	6,194	2,008	8,202	18,952	19,209	31,355,000	2,583,000	9.00
1979	8,552	1,583	10,135	6,452	1,937	8,389	19,094	18,987	29,810,000	1,410,000	12.64
1980	8,597	1,573	10,170	5,219	1,646	6,865	17,695	17,600	29,805,000	2,970,000	21.59
1981	8,572	1,609	10,181	4,141	1,599	5,740	16,567	16,653	29,426,000	2,570,000	31.77
1982	8,649	1,550	10,199	3,323	1,625	4,948	15,790	16,111	27,858,000	1,382,000	28.52
1983	8,688	1,559	10,247	3,096	1,721	4,817	15,801	15,970	27,735,000	2,897,000	26.19
1984	8,879	1,630	10,509	3,229	2,011	5,240	16,533	16,448	28,446,000	3,748,000	25.88
1985	8,971	1,609	10,580	3,083	1,866	4,949	16,287	16,507	28,416,000	3,022,000	24.09
1986	8,680	1,551	10,231	4,130	2,046	6,176	17,218	17,066	N/A	N/A	12.66

Sources: Energy Information Administration and American Petroleum Institute

Notes: Imports to Strategic Petroleum Reserve are excluded. Total supply includes processing gain, unaccounted crude, other hydrocarbons, total production and imports. Reserves estimated as of December 31st each year.

Statistical Summary—continued

	NATURAL GAS		GAS RESERVES		NATURAL GAS PRICE	DRILLING DATA				TOTAL FOOTAGE DRILLED
	Marketed Production	Gas Imports	Proved Reserves	New Reserves		Oil Wells	Gas Wells	Dry Holes	Total Wells	
	(MMcf)				($/Mcf)	(number of wells)				(mill. ft.)
1947	4,582,173	N/A	165,926,914	10,980,824	.06	17,999	3,305	9,538	33,122	114.1
1948	5,148,020	N/A	173,869,340	13,950,054	.07	22,585	2,897	12,026	39,778	137.4
1949	5,419,736	N/A	180,381,344	12,757,045	.06	22,042	2,887	12,727	39,038	138.0
1950	6,282,060	N/A	185,592,699	12,104,033	.07	24,430	2,843	14,757	43,279	159.3
1951	7,457,359	N/A	193,811,500	16,185,742	.07	23,453	3,030	16,653	44,516	172.3
1952	8,013,457	7,807	199,716,225	14,544,363	.08	23,466	3,255	17,618	45,821	187.2
1953	8,396,916	9,225	211,447,132	20,969,447	.09	25,762	3,806	18,449	49,279	198.8
1954	8,742,546	6,847	211,710,732	9,690,109	.10	29,773	3,974	19,168	53,927	219.0
1955	9,405,351	10,888	223,697,445	22,104,831	.10	31,567	3,608	20,742	56,677	226.3
1956	10,081,923	10,380	237,774,569	24,985,050	.11	30,737	4,543	21,797	58,126	233.9
1957	10,680,258	37,941	246,569,255	20,297,045	.11	28,012	4,620	20,976	53,838	223.1
1958	11,030,248	135,797	254,142,037	19,057,808	.12	24,578	4,803	19,043	50,039	198.2
1959	12,046,115	133,990	262,596,593	20,895,184	.13	25,800	5,029	19,265	51,764	209.2
1960	12,771,038	155,646	263,758,800	14,252,657	.14	21,186	5,258	17,574	46,751	190.7
1961	13,254,025	218,860	267,727,671	17,420,576	.15	21,101	5,664	17,106	46,962	192.1
1962	13,876,622	401,534	273,765,604	19,750,378	.16	21,249	5,848	16,682	46,179	198.6
1963	14,746,663	406,204	276,151,233	18,418,400	.16	20,288	4,751	16,347	43,653	184.4
1964	15,546,592	443,326	281,251,454	20,447,249	.15	20,620	4,855	17,488	45,236	189.9
1965	16,039,753	456,394	286,468,923	21,469,762	.16	18,761	4,724	16,025	41,423	181.5
1966	17,206,628	479,780	289,332,805	20,354,955	.16	16,447	4,167	15,770	38,536	165.5
1967	18,171,325	564,226	292,907,703	21,955,736	.16	15,329	3,659	13,246	33,818	144.7
1968	19,322,400	651,885	287,349,852	13,815,576	.16	14,331	3,456	12,812	32,914	149.3
1969	20,698,240	726,951	275,108,835	8,482,173	.17	14,368	4,083	13,736	34,053	161.0
1970	21,920,642	820,780	290,746,408	37,598,377	.17	13,043	4,031	11,099	29,542	142.0
1971	22,493,012	934,548	278,805,618	10,135,722	.18	11,903	3,983	10,382	27,682	130.7
1972	22,531,698	1,019,496	266,084,846	9,791,126	.19	11,437	5,484	11,013	29,420	142.5
1973	22,647,549	1,032,901	249,950,207	6,470,767	.22	10,251	6,975	10,466	28,662	141.9
1974	21,600,522	959,284	237,132,497	8,500,760	.30	13,644	7,168	12,205	34,415	156.7
1975	20,108,661	953,008	228,200,176	10,786,249	.45	16,979	8,169	13,736	40,804	184.9
1976	19,952,438	963,768	216,026,047	7,367,918	.58	17,697	9,438	13,805	42,614	190.9
1977	20,025,463	1,011,001	207,413,000	12,978,000	.79	18,700	12,119	15,036	47,308	219.6
1978	19,974,033	965,545	208,033,000	19,425,000	.91	19,065	14,405	16,591	51,671	242.5
1979	20,471,260	1,253,383	200,997,000	12,221,000	1.18	20,689	15,166	16,035	53,362	247.4
1980	20,179,724	984,767	199,021,000	16,723,000	1.59	32,120	17,132	20,234	71,562	316.4
1981	19,955,823	903,949	201,730,000	21,446,000	1.98	42,520	19,742	26,972	91,600	412.3
1982	18,519,675	933,336	201,512,000	17,288,000	2.46	38,388	18,584	25,545	84,729	377.6
1983	16,822,144	918,407	200,247,000	14,523,000	2.59	38,194	12,699	23,692	76,617	318.7
1984	18,229,638	843,060	197,463,000	14,409,000	2.66	43,668	14,686	24,991	85,551	370.8
1985	17,197,999	949,715	193,369,000	11,891,000	2.51	35,383	12,480	20,680	70,195	315.4
1986	16,808,753	749,378	N/A	N/A	1.87	17,201	6,889	11,506	36,209	168.7

Sources: Drilling data from American Petroleum Institute and American Association of Petroleum Geologists, based on estimated well completion system.
Reserves from American Gas Association and Energy Information Administration.
All other data from Energy Information Administration.

Notes: Total wells and footage drilled include service wells, stratigraphic and core tests.
Reserves estimated as of December 31st each year.

CALENDAR OF EVENTS

1987

OCT. 11-13

IPAA Annual Meeting
Hyatt Regency
Austin, Texas

1988

MAY 11-13

IPAA Midyear Meeting
Washington Hilton Hotel
Washington, D.C.

iesco

INDUSTRIAL ENERGY SERVICES CO.

Headquarters:
Suite 600
The Gatehouse
Station Square
Pittsburgh, PA 15219
(412) 391-3904

Gulf Coast Region:
Suite 4730
1100 Louisiana Street
Houston, TX 77002
713-651-9224

Natural Gas Marketing and Transportation Expertise

Industrial and Cogeneration Consulting

Timothy Merrill, Jr.
Donald Alcorn
Roger Calhoun
Jackie Abshire
Patrick Findle
David Boger
Ronald D'Angelo
James H. Stephens
Robert Hilton (Houston)

Value of U.S. Fossil Fuels

(bill. $)	Crude Oil	Natural Gas	Coal and Lignite	Anthracite	Total
1977	25.79	15.82	13.70	0.20	55.51
1978	28.60	18.18	14.49	0.18	61.45
1979	39.45	24.16	18.36	0.20	82.17
1980	67.93	32.09	20.20	0.26	120.48
1981	99.40	39.51	21.51	0.24	160.66
1982	90.03	45.56	22.62	0.23	158.44
1983	83.05	43.57	20.11	0.21	146.94
1984	84.10	48.49	22.75	0.20	155.54
1985	78.88	43.17	22.06	0.22	144.33
1986	40.05	31.31	21.67	0.17	93.20

Source: Energy Information Administration

Energy Consumption

	Crude Oil and NGL	Natural Gas	Other Sources	Total Energy	Energy Use Per Capita
	(Quad. BTU)				(Mill. BTU)
1956	17.94	9.61	12.83	40.38	240
1957	17.93	10.19	12.36	40.48	236
1958	18.53	10.66	11.16	40.35	232
1959	19.32	11.72	11.10	42.14	238
1960	19.92	12.39	11.49	43.80	243
1961	20.22	12.93	11.31	44.46	243
1962	21.05	13.73	11.75	46.53	250
1963	21.70	14.40	12.22	48.32	256
1964	22.30	15.29	12.91	50.50	264
1965	23.25	15.77	13.66	52.68	272
1966	24.40	17.00	14.26	55.66	285
1967	25.28	17.94	14.35	57.57	292
1968	26.98	19.21	14.81	61.00	306
1969	28.34	20.68	15.17	64.19	319
1970	29.52	21.79	15.12	66.43	326
1971	30.56	22.47	14.86	67.89	328
1972	32.95	22.70	15.61	71.26	340
1973	34.84	22.51	16.93	74.28	351
1974	33.45	21.73	17.36	72.54	340
1975	32.73	19.95	17.87	70.55	327
1976	35.17	20.35	18.84	74.36	342
1977	37.12	19.93	19.24	76.29	347
1978	37.97	20.00	20.12	78.09	352
1979	37.12	20.67	21.11	78.90	351
1980	34.20	20.39	21.37	75.96	334
1981	31.93	19.93	22.13	73.99	322
1982	30.23	18.51	22.10	70.84	305
1983	30.05	17.36	23.09	70.50	301
1984	31.05	18.51	24.50	74.06	313
1985	30.92	17.85	25.19	73.96	310
1986	32.18	16.53	25.38	74.09	307

Source: Energy Information Administration

Advertisers' Index

Ariel Corporation 98
Alexander Oil Tools 85
Baker Hughes 2
Bituminous Insurance Companies 91
Eastex Energy, Inc. 99
First Republic Bank of Fort Worth 9
Halliburton Resource Management 1
Halliburton Services ..... Cover 3
Industrial Energy Services, Co. 110
Newport Steel Corp. 11
Petroleum Information 13
Seagull Energy Corporation 84
Schlumberger Well Services ..... Cover 4
Taylor Stratmark 5
Underwriters Indemnity 2

MOVING?

Attach Mailing Label Here

Let us know as soon as possible so we can deliver *Petroleum Independent* to you at your new address. Please attach the old mailing label from the cover of the magazine and attach it to this space. Then fill out your new address below.

Company name_____

Name_____

Address_____

City_____

State_____ Zip_____

PROBLEMS?

If you have problems receiving your magazine, or if you have a question, please get in touch with us. When you do, please enclose a recent mailing label or invoice.

Because the subscription system involves computers, please allow six weeks for address changes or other adjustments. If for any reason you feel it takes an unusually long time or you aren't satisfied, feel free to write or call Rick Carbo, Subscription Dept., Petroleum Independent, 1101 16th St., N.W., Washington, D.C. 20036. The phone number is (202) 857-4775.

Our subscription list cannot be bought by any outside organization for any reason.

Glossary

Abandonments — The number of producing wells that have been abandoned during a given time period.

Artificial Lifting — Any method used to stimulate the production of oil and/or gas in excess of the flow resulting under natural reservoir pressures, e.g. pumping, secondary or tertiary recovery.

Associated Gas — Natural gas that occurs with crude oil in the reservoir either as free gas or insolution, also known as gas-cap gas.

Barrel (bbl.) — The standard volumetric measure for petroleum, equivalent to 42 U.S. gallons.

Chase Bank Group — A group of the largest U.S. petroleum companies from which Chase Manhattan Bank gathers annual financial and operating data. All other domestic petroleum companies in the industry are aggregated to represent the independent sector.

Condensate — A mixture ofliquid hydrocarbons at atmospheric conditions which occur in a gaseous state underground, sometimes known as distillate or natural gasoline.

Crude Oil — Hydrocarbons in liquid unprocessed form that vary significantly in properties such as API gravity, viscosity and sulfur content.

Cubic Foot — The standard measure for natural gas; the amount required to fill a volume of one cubic foot under given atmospheric conditions.

Development Well — Either an oil well, gas well, or dry hole drilled within an area known to be productive.

Distillate Fuel Oil — One of the petroleum fractions produced by conventional distillate, includes fuel oil and diesel fuel.

Dry Hole — A completed well which is not productive of oil and/or gas in commercial quantities.

Exploratory Well — Either an oil well, gas well, or dry hole drilled to discover a petroleum formation or its limits.

Field — An area that encompasses a group of oil and/or gas wells, underlaid by one or more reservoirs.

Liquefied Petroleum Gas (LPG) — Butane, propane and other light products separated from natural gasoline or crude oil by fractionation or other processes. At atmospheric pressure, it reverts to the gaseous state.

Middle Distillates — A general classification of petroleum products that includes distillate fuel oil and kerosene.

Natural Gas — Hydrocarbons in gaseous form or mixed with crude oil.

Natural Gas Liquids (NGL) — Hydrocarbons found with natural gas that are recoverable by condensation or absorption, such as LPG or natural gasoline.

Nonassociated Gas — Free natural gas that does not occur in contact or dissolved with crude oil in the reservoir.

Petroleum — Includes in its broadest sense the entire spectrum of hydrocarbons — gaseous, liquid and solid.

Proved Reserves — The estimated quantity of crude oil, natural gas or NGL that is shown with reasonable certainty to be recoverable from known fields under existing economic and operating conditions.

Residual Fuel Oil — The heavy, high viscosity leftover from the refining process, used mainly for industrial purposes.

Rotary Drilling Rig — A derrick equipped with modern rotary equipment capable of drilling a bore hole with a bit attached to a rotating column of steel pipe, in contrast to a cable tool rig which drills on the percussion principle.

Seismic Exploration Activity — The search for geological structures that are potential petroleum bearing formations. A group of geophysicists explode charges in shotholes and interpret on geophones the data from seismic shocks.

Severance Tax — A tax levied by some states on each barrel of oil or each thousand cubic feet of gas produced.

Strategic Petroleum Reserve — Crude oil inventories held in government underground storage for use during periods of supply interruptions.

Stratigraphic Test — A hole drilled to gather information about a stratigraphic formation such as the general permeability and porosity of the rocks; includes coretests.

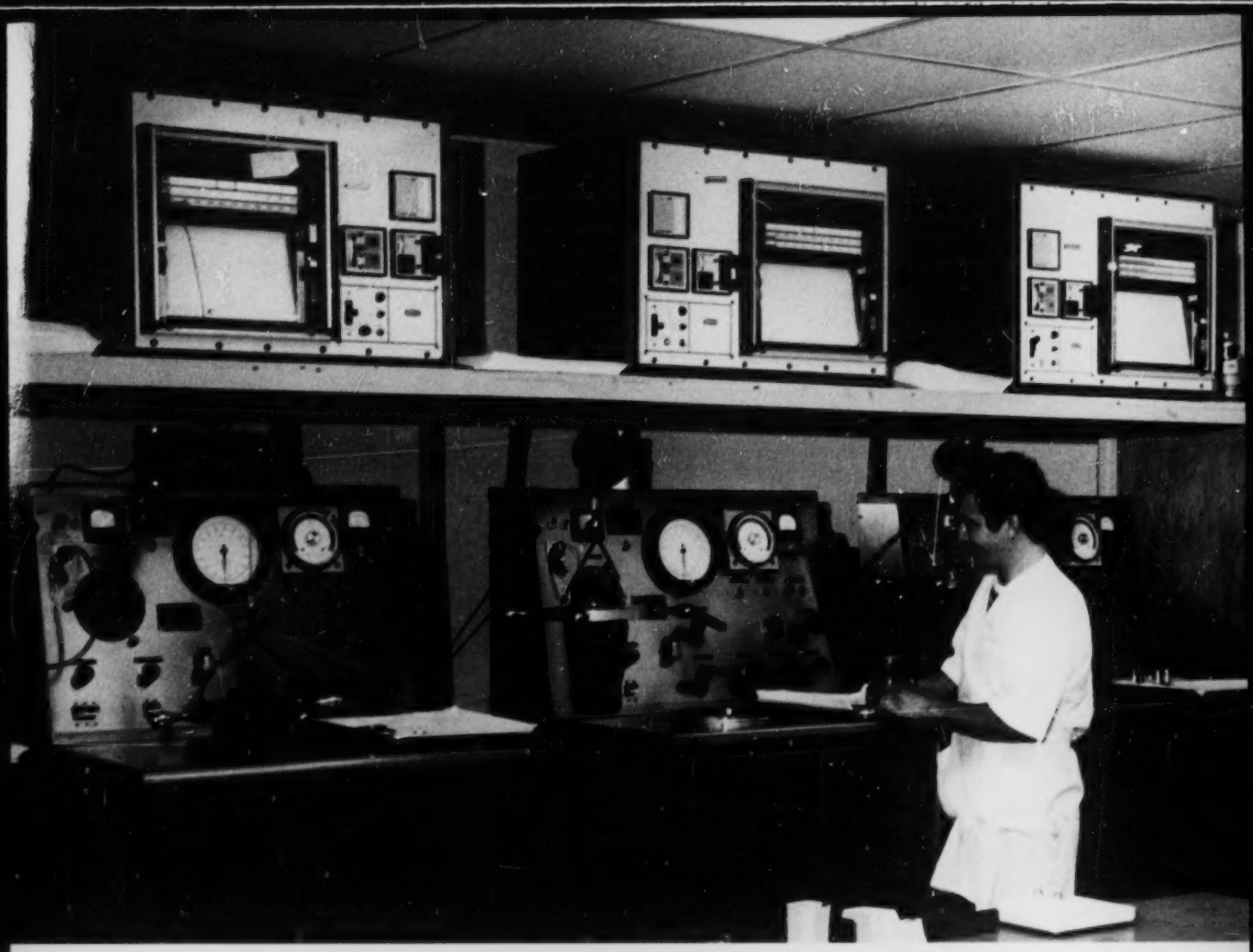
Stripper Well — A producing well which pumps or "strips" less than 10 barrels of oil or 60 Mcf of natural gas per day.

Well — A hole drilled to find or produce hydrocarbons, or to provide services related to their production.

Wildcat Well — A type of exploratory well drilled in an unproven area where there has been no previous production of oil and/or gas.

Abbreviations

Mcf	=	thousand cubic feet
MMcf	=	million cubic feet
Bcf	=	billion cubic feet
Tcf	=	trillion cubic feet
b/d	=	barrels per day
BTU	=	British Thermal Unit
EIA	=	Energy Information Administration
API	=	American Petroleum Institute



Successful cementing: it's more than just pumping slurry.

Successful answers to your cementing requirements normally start before Halliburton's pumping equipment rolls on location. They're worked out in one of our field labs that can formulate and test slurries to match your specific well conditions.

And since we haven't closed any division labs in spite of the times — they're practically next door to everywhere. Plus, each lab is manned by experienced professionals who know local wells and formations.

That means that in addition to a slurry recommendation, your job is also matched with techniques and equipment that are proven effective in your area.

That's our basic approach to any cementing assignment — attack the problem in the lab first. Then we're fully prepared to do the job right to your specifications when the moment of truth comes in the field.

You can still count on a local field lab to help work out the cementing answers for your well when you call Halliburton. That's just more reason to make Halliburton your cementer.

Your best way to make the most of every well.

HALLIBURTON SERVICES
Duncan, Oklahoma 73536
A Halliburton Company

Schlumberger Wildcatters:

Their methods are different, but the results have been the same.

Hundreds of times.

Since its founding in 1966, members of the Wildcatter's Club have changed dry holes and abandoned fields into commercially productive oil and gas wells 358 times, to be exact. That represents a lot of oil and gas that wouldn't have been produced, had it not been for Schlumberger's thorough evaluations.

The Wildcatter's Club consists of Schlumberger engineers who used our technology and their own interpretative abilities to identify commercial pay zones that weren't revealed in initial evaluations.

So before you give up on a well, call your Schlumberger representative. It's a move that could spell success for your dry hole.

Schlumberger

Value that makes the difference.